BMJ Open

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Journal:	*BMJ Open*
Manuscript ID	bmjopen-2023-071939
Article Type:	Original research
Date Submitted by the Author:	18-Jan-2023
Complete List of Authors:	Neyazi, Ahmad; Afghanistan Center for Epidemiological Studies Padhi, Bijaya; Post Graduate Institute of Medical Education and Research, Community Medicine and School of Public Health Mohammadi, Ab. Qadim; Herat Regional Hospital Ahmadi, Mahsa; George Mason University, Department of Neuroscience Erfan, Adiba; Balkh University Bashiri, Bahara; Balkh University Neyazi, Mehrab; Atefi Institute of Health Sciences Ishaqzada, Marjina; Moora Educational Complex Noormohammadi, Morteza; Ghalib University Griffiths, Mark; Nottingham Trent University, Social Sciences
Keywords:	Quality of Life, Depression & mood disorders < PSYCHIATRY, Anxiety disorders < PSYCHIATRY

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Depression, Anxiety, and Quality of Life of Afghan Women Under the Taliban Government: A cross-sectional study

Ahmad Neyazi*
Afghanistan Center for Epidemiological Studies, Herat, Afghanistan.
Bijaya Kumar Padhi
Department of Community Medicine and School of Public Health, Postgraduate Institute of Medical Education and Research, Chandigarh, India.
Ab. Qadim Mohammadi
Mental Health Ward, Herat Regional Hospital, Herat, Afghanistan.
Mahsa Ahmadi
Department of Neuroscience, George Mason University, Fairfax, VA, United States.
Adiba Erfan
Faculty of Medicine, Balkh University, Mazar-e-Sharif, Afghanistan.
Bahara Bashiri
Faculty of Medicine, Balkh University, Mazar-e-Sharif, Afghanistan.
Mehrab Neyazi
Faculty of Pharmacy, Atefi Institute of Health Sciences, Herat, Afghanistan
Marjina Ishaqzada
Faculty of Medicine, Moraa Educational Complex, Kabul, Afghanistan.
Morteza Noormohammadi
Afghanistan Center for Epidemiological Studies, Herat, Afghanistan.
Mark D. Griffiths
Department of Psychology, Nottingham Trent University, United Kingdom.

*** Corresponding author: Ahmad Neyazi**

Afghanistan Center for Epidemiological Studies, Herat, Afghanistan.
ahmadniazi000@gmail.com

ORCID: 0000-0002-6181-6164

Word count: 3808

Abstract

Objectives: According to the World Health Organization (WHO), depression is a common mental health illness that is characterized by a persistent feeling of sadness and loss of interest. The present study examined the association of two mental health variables (i.e., depression, anxiety) with quality of life (QoL), and the socio-demographic characteristics of Afghan women living under the rule of Taliban government in Afghanistan.

Design: Cross-sectional study administered between Nov 10, 2021 to Dec 25 2021 among women.

Setting: Across major provinces of Afghanistan (Herat, Mazar-e-Sharif, Kabul, and Samangan).

Measurements: Data were collected using a pretested structured questionnaire. Data entry was carried out using *Microsoft Excel 2016*. And then exported to IBM SPSS version 26 for Microsoft Windows. Logistic regression models were used to examine the association of depression, anxiety with QoL and socio-demographic characteristics among women (N=465).

Results: The prevalence of depression symptoms were 80.6%, and mild to extremely severe anxiety was 81.3%. Depression symptoms among Afghan women were associated with being older, having more children, lower education level, other individuals' bad behavior, traumatic events, and feeling physically ill. Multiple regression analysis indicated that poor physical domain of quality of life (aOR:4.3; 95%CI: 1.748-11.029, p=.002), and poor psychological domain of quality of life (aOR:22.168; 95%CI: 7.50 – 65.49, p<.001) were significantly associated with depression.

Conclusion: The prevalence of depression was high women living under the government of the Taliban in Afghanistan. Considering the high prevalence of depression, anxiety, and their impact on quality of life and the overall quality of healthcare services, international health organizations should implement programs for regular screening of depression and anxiety, and there should be psychological counselling services available for vulnerable women living under the government of the Taliban.

Keywords: depression, anxiety, quality of life, women, Taliban, Afghanistan.

Introduction

According to the World Health Organization (WHO), depression is a common mental health illness that is characterized by a persistent feeling of sadness and loss of interest [1]. Symptoms include fatigue, poor concentration, and disrupted sleep and appetite [1]. The WHO also states that nearly 5% of adults worldwide suffer from depression. It also notes that depression can limit an individual's capacity to function and live a fulfilling life. Life events and difficulties such as the death or loss of a loved one, financial issues, conflicts, and poor social support can trigger depression [2]. According to the WHO, depression is a leading cause of disability, and disproportionately affects women [1]. Consequences can include suicide and self-destructive behaviors. In relation to gender differences in depression, a group of researchers in China found that genetic factors and the differential heritability of depression between men and women, may be one of the reasons why women are more susceptible to depression than men [9]. Moreover, women can experience depression during pregnancy [10], but also, according to Guo et al., 1 in 20 women in the US of reproductive age who are not pregnant also suffer from major depression [11].

Anxiety is another common mental health disorder [3]. It is characterized by feelings of tension and anxious thoughts, as well as elevated blood pressure [4]. Normally, anxiety is a natural emotion needed for survival. However, excessive anxiety, particularly in the absence of any threat, is considered a mental illness [3]. Cognitive symptoms include difficulty speaking, poor concentration, poor memory, and confusion [5]. Moreover, physiological symptoms include shaking, sweating, dizziness, nausea, and increased heart rate.

The WHO defines the quality of life (QoL) as an individual's view of their position in life in relation to their goals, standards, and concerns and within the framework of their culture and value systems [6]. Quality of life (QoL) describes the overall well-being of an individual including the positive and negative aspects of their life [7]. These aspects include physical, mental, and spiritual health as well as education status, safety, freedom, relationships, and wealth. QoL is becoming more of a subjective individual perception and less objective [8].

Nearly 50% of those with depression are also diagnosed with anxiety disorders [12]. Anxiety can also run across generations. In a Swedish study, researchers found that women whose mothers were diagnosed with anxiety were more than twice as likely to experience anxiety disorders themselves [13]. Moreover, if both the mother and grandmother had an anxiety disorder, the odds of a child being diagnosed with anxiety increases threefold [14]. Anxiety and depression are highly comorbid mental health disorders, and their symptoms commonly overlap [14]. Among the causes of depression are stressful events, family history, specific personality traits (e.g., neuroticism), loneliness, and childbirth [15]. On the other hand, factors such as traumatic life events or underlying health issues can lead to anxiety disorders [16]. A national survey on depression and anxiety in Afghanistan (where the present study was carried out), reported that the Afghan population was heavily exposed to traumatic events, with 64.7% having personally encountered at least one traumatic life event [17]. A study conducted by Najafipour et al. in Iran in 2021, reported that the likelihood of developing anxiety and depression was 2.26 and 2.56 times higher among women compared to men, respectively [18]. Najafipour et al. also noted that research into QoL can be diverse regarding research groups, designs, and measures.

Moreover, QoL is mainly studied in developed countries. However, the cross-cultural significance of QoL is not clear. According to a global survey in 2020, QoL was higher among older male adults compared to older female adults across many nations [19-20]. In relation to the factors affecting QoL, it has been found that socio-economic factors play an important role in the QoL such that the QoL among individuals in developing countries is significantly impacted by a lack of financial support [21]. Another study noted that QoL is lower among individuals with anxiety and depression even before the onset of depression [22]. However, their QoL further drops with the onset of mental health disorders [22]. In relation to the factors

affecting QoL among patients with depression, Cho et al. reported that *"older age, lower level of education, lower income, worse subjective perception of health, unemployment, obesity and mental health struggles"* are related to the lower QoL among patients experiencing depression [23].

According to the WHO, one in ten individuals living in conflict zones experience moderate or severe mental health disorders and there is still a lack of awareness around mental health in many countries [24]. After two decades of war, the Taliban returned to power in Afghanistan in 2021 [25]. Due to such conflicts and wars, the mental health of Afghan youth has been negatively impacted. A 2021 report noted that after decades of war and due to the current political situation in Afghanistan, immediate attention and investment is required for mental health [26]. Moreover, due to the social norms in Afghanistan, women and girls face additional obstacles. A cross-sectional study conducted in 2022, found that gender plays a role in the mental health of high school students such that girls experienced higher levels of anxiety and depression in comparison to boys [27]. Another recent 2022 study examining mental health and suicidality among Afghan university students reported that 69.7% had clinical signs of depression after the takeover of Taliban in 2021 [28].

Many studies have emphasized the importance of mental health [29-31]. However, under the rule of the Taliban government in Afghanistan, no previous study has examined depression, anxiety, and QoL all together and specifically among women under the rule of Taliban. The present study is the first to investigate depression, anxiety, and QoL among women simultaneously. It also examined the factors associated with depression, anxiety, and QoL. Finally, the study examined the association of the two mental health variables (depression, anxiety) with QoL, and the socio-demographic characteristics of Afghan women living under the rule of Taliban.

Methods

Participants, study design, and sample

A cross-sectional study was conducted by the Afghanistan Center for Epidemiological studies . The study participants (N=465) women aged 15-70 years were recruited randomly across major provinces (Herat, Mazar-e-Sharif, Kabul, and Samangan) ofAfghanistan. Participants were interviewed face-to-face and their answers were recorded by the data collectors. The eligibility criteria to participate in the present study were: (i) being female; (ii) being 15 years old or older; (iii) being able to understand the Dari language, and (iv) providing written or verbal informed consent for adults (aged 18 years or above) from themselves and for adolescents (aged 15 -18 years) from their parents. The target sample size of participants was determined using the formula $N = Z\alpha 2P(1 - P) / d2$, in which $\alpha = 0.05$ and $Z\alpha = 1.96$, and the estimated acceptable margin of error for proportion d was 5%. The proportion of women with depression was estimated at 80%, based on the available literature [51]. The sample size was calculated using OpenEpi software (v3.01).

Instruments

A survey consisting of four sub-sections was used in the present study. The sub-sections assessed: socio-demographics, depression, anxiety, and quality of life.

The socio-demographic section included questions concerning age, height, weight, marital status, number of children, province of residency, type of residency (urban or rural), educational level, monthly income, occupation, individual behavior (how good or bad other people behaved with the participants during the past month), Taliban's behavior (how good or bad the Taliban forces behaved with the participants during the past month), whether a traumatic event had occurred during the past month, and feeling physically ill during the past month.

In order to assess participants' symptoms of depression, the Dari version of the 20-item Center for Epidemiological Studies Depression Scale (CES-D) was used [46-47]. The CES-D comprises three sub-scales

(negative items, positive items, and interpersonal relationships). All of the items (e.g., *"I felt everything I did was an effort"*) are scored from 0 ("*rarely or none of the time/less than one day during the past week*") to 3 ("*Most of all of the time/5-7 days during the past week").* The scores range from 0 to 60. The standard cut-off score was used as follows: a score between 0 to 15 is considered as normal. Participants with a score higher than 15 are considered as having depression symptoms. Cronbach's alpha in the present study was 0.87.

In order to assess participants' symptoms of anxiety, the 14-item subscale of the Dari version of the Depression, Anxiety, Stress Scale-42 (DASS-42) was used [48]. All of the items (e.g., *"I had a feeling of faintness"*) are scored from 0 ("*did not apply to me at all*") to 3 ("*Applied to me very much, or most of the time*"). The scores range from 0 to 42 which indicate one of the five states of anxiety: a score between 0 to 7 is considered as normal; 8 to 9 indicates mild anxiety; 10 to 14 indicates moderate anxiety; 15-19 indicates severe anxiety; and a score of 20 or higher indicates extremely severe anxiety. Cronbach's alpha in the present study was 0.83.

In order to assess participants' quality of life, the Dari language validated version of the World Health Organization Quality of Life–BREF (WHOQOL-BREF-26) was used [49]. The WHOQOL-BREF-26 comprises four subscales (physical health domain, psychological health domain, social relationships domain, and environment domain). All of the items (e.g., *"To what extent do you feel that physical pain prevents you from doing what you need to do?"*) are scored from 1 (*not at all*) to 5 (*an extreme amount*). In order to make scores comparable with the WHOQOL-100, raw scores were converted into the transformed score to range within 0-100. For each subscale of the WHOQOL-BREF 26, a total score of less than 46 indicates low QoL; 46 to 65 indicates moderate QoL; and higher than 65 indicates high QoL [50]. Cronbach's alpha in the present study was 0.85.

Analysis

Data entry was carried out using *Microsoft Excel 2016*. The analysis was performed with the *IBM SPSS version 26.0 for Windows*. Descriptive statistics included means, standard deviations, frequencies, and percentages. Associations between variables were evaluated using chi-square tests. Multiple regression analysis was used to examine independent socio-demographics, sub-groups of the QoL, and anxiety with the presence of depression. All of the variables with a *p*-value less than 0.05 were considered as significant.

Patient and public involvement statement

Patients or the public were not involved in the design, conduct, reporting and dissemination plans of our research.

Results

Socio-demographics

Two-thirds of the participants' BMI were in normal weight range (70.8%). More than half of the participants were single (52.0%). Almost half of the participants reported that their monthly income was less than the equivalent of $50 (US) (54.6%). Almost two-thirds of the participants were unemployed (69.2%) **(Table 1)**.

Table 1. Socio-demographic characteristics in the study sample (N=465)

Characteristic	Categories	Number (N)	Percentage (%)
Age group	15–24-years	253	54.4
	25–70-years	212	45.6
BMI	Underweight	34	7.3
	Normal weight	329	70.8
	Overweight	76	16.3
	Obesity	26	5.6
Marital status	Single	242	52.0
	Married	195	41.9
	Widow/divorced	28	6.1
Number of children	None	280	60.2
	1-5	136	29.2
	5-12	49	10.5
Province	Herat	106	22.8
	Kabul	120	25.8
	Mazar-e-Sharif	119	25.6
	Samangan	120	25.8
Residency	Urban	438	94.2
	Rural	27	5.8
Education level	Illiterate	90	19.4
	Primary school	22	4.7
	Secondary school	21	4.5
	High school	101	21.7
	University	231	49.7
Monthly income	Less than $50	254	54.6
	$50 - $100	96	20.6
	$100 - $200	77	16.6
	$200 - $300	32	6.9
	More than $300	6	1.3
Occupation	Employed	143	30.8
	Unemployed	322	69.2
Individuals' behavior in the past month	Good	363	78.1
	Bad	102	21.9
Taliban's behavior in the past month	Good	180	38.7
	Bad	285	61.3
Traumatic event in the past month	Yes	332	71.4
	No	133	28.6
Feeling physically ill in the past month	Yes	119	25.6
	No	346	74.4
Total		**465**	**100.0**

The portions of participants with a high QoL in the four domains was as follows: physical health domain (13.5%), psychological health domain (11.8%), social relationship domain (14.2%), and environment domain (3.7%) category **(Figure 1)**.

<Figure 1>

Four-fifths of the participants had symptoms of depression (80.6%). Symptoms of depression were significantly related to (i) age (older women more likely to depressed), (ii) number of children (women with more children more likely to be depressed), (iii) educational level (women with lower education more likely to be depressed), (iv) other individuals' behavior (women who were treated badly by other

Individuals in the past month more likely to be depressed), (v) traumatic events (women experiencing a traumatic event in the past month more likely to be depressed), and (vi) feeling physically ill (women feeling physically ill more likely to be depressed compared to those who did not) **(Table 2).**

Table 2. Association of depression with participants socio-demographic characteristics (n=465)

Characteristic	Categories	Mental health		*p*-value
		Normal	Depressed	
		N (%)	N (%)	
Age group	15–24-years	61 (24.1)	192 (75.9)	**.005**
	25–70-years	29 (13.7)	183 (86.3)	
BMI	Underweight	8 (23.5)	26 (76.5)	.688
	Normal weight	65 (19.8)	264 (80.2)	
	Overweight	14 (18.4)	62 (81.6)	
	Obesity	3 (11.5)	23 (88.5)	
Marital status	Single	55 (22.7)	187 (77.3)	.075
	Married	33 (16.9)	162 (83.1)	
	Widow/divorced	2 (7.1)	26 (92.9)	
Number of children	None	66 (23.6)	214 (76.4)	**.011**
	1-5	20 (14.7)	116 (85.3)	
	5-12	4 (8.2)	45 (91.8)	
Province	Herat	26 (24.5)	80 (75.5)	.065
	Kabul	14 (11.7)	106 (88.3)	
	Mazar-e-Sharif	27 (22.7)	92 (77.3)	
	Samangan	23 (19.2)	97 (80.8)	
Residency	Urban	86 (19.6)	352 (80.4)	.538
	Rural	4 (14.8)	23 (85.2)	
Education level	Illiterate	8 (8.9)	82 (91.1)	**.005**
	Primary school	1 (4.5)	21 (95.5)	
	Secondary school	5 (23.8)	16 (76.2)	
	High school	18 (17.8)	83 (82.2)	
	University	58 (25.1)	173 (74.9)	
Monthly income	Less than $50	40 (15.7)	214 (84.3)	.062
	$50 - $100	18 (18.8)	78 (81.3)	
	$100 - $200	20 (26.0)	57 (74.0)	
	$200 - $300	11 (34.4)	21 (65.6)	
	More than $300	1 (16.7)	5 (83.3)	
Occupation	Employed	26 (18.2)	117 (81.8)	.670
	Not employed	64 (19.9)	258 (80.1)	
Individuals' behavior in the past month	Good	83 (22.9)	280 (77.1)	**<.001**
	Bad	7 (6.9)	95 (93.1)	
Taliban's behavior in the past month	Good	41 (22.8)	139 (77.2)	.138
	Bad	49 (17.2)	236 (82.8)	
Traumatic event in the past month	Yes	45 (13.6)	287 (86.4)	**<.001**
	No	45 (33.8)	88 (66.2)	
Feeling physically ill in the past month	Yes	12 (10.1)	107 (89.9)	**.003**
	No	78 (22.5)	268 (77.5)	
Total		**90 (19.4)**	**375 (80.6)**	

Approximately four-fifths of the participants were found to have mild to extremely severe level of anxiety (81.3%). More specifically, 18.7% had no anxiety at all, 6.4% had mild anxiety, 23.4% had moderate anxiety, 21.7% had severe anxiety, and 29.8% had extremely severe anxiety. Symptoms of mild to severe anxiety were significantly related to (i) age (older women more likely to have anxiety), marital status (single women less likely to have anxiety), number of children (women with more children more likely to have anxiety), province (women living in Kabul more anxious than those living in Mazar-e-Sharif), educational level (women with lower education more likely to be anxious), monthly income (women with low incomes more likely to have anxiety), occupation (unemployed women less likely to have anxiety), traumatic events (women experiencing a traumatic event in the past month more likely to have anxiety), and feeling sick (women feeling physically ill in the past month more likely to have anxiety than those who did not) **(Table 3).**

Table 3. Association of anxiety with participants socio-demographic characteristics (N=465)

Characteristic	Categories	Mental health		*p*-value
		Normal	Anxious	
		N (%)	N (%)	
Age group	15–24-years	34 (25.0)	102 (75.0)	**.004**
	25–70-years	10 (10.1)	89 (89.9)	
BMI	Underweight	4 (21.1)	15 (78.9)	.873
	Normal weight	33 (19.6)	135 (80.4)	
	Overweight	5 (14.7)	29 (85.3)	
	Obesity	2 (14.3)	12 (85.7)	
Marital status	Single	36 (24.3)	112 (75.7)	**.016**
	Married	7 (9.5)	67 (90.5)	
	Widow/divorced	1 (7.7)	12 (92.3)	
Number of children	None	37 (23.7)	119 (76.3)	**.022**
	1-5	6 (9.4)	58 (90.6)	
	5-12	1 (6.7)	14 (93.3)	
Province	Kabul	15 (12.6)	104 (87.4)	**.015**
	Mazar-e-Sharif	29 (25.0)	87 (75.0)	
Residency	Urban	43 (19.0)	183 (81)	.551
	Rural	1 (11.1)	8 (88.9)	
Education level	Illiterate	0 (0.0)	25 (100.0)	**.015**
	Primary school	0 (0.0)	11 (100.0)	
	Secondary school	0 (0.0)	3 (100.0)	
	High school	9 (16.7)	45 (83.3)	
	University	35 (24.6)	107 (75.4)	
Monthly income	Less than $50	12 (13.2)	79 (86.8)	**.033**
	$50 - $100	7 (12.5)	49 (87.5)	
	$100 - $200	17 (28.3)	43 (71.7)	
	$200 - $300	8 (32.0)	17 (68.0)	
	More than $300	0 (0.0)	3 (100.0)	
Occupation	Employed	10 (10.2)	88 (89.8)	**.005**
	Unemployed	34 (24.8)	103 (75.2)	
Individuals' behavior in the past month	Good	35 (21.3)	129 (78.7)	.118
	Bad	9 (12.7)	62 (87.3)	
Taliban's behavior in the past month	Good	21 (18.3)	94 (81.7)	.859
	Bad	23 (19.2)	97 (80.8)	

Traumatic event in the past month	Yes	22 (14.7)	128 (85.3)	**.034**
	No	22 (25.9)	63 (74.1)	
Feeling physically ill in the past month	Yes	2 (5.0)	38 (95.0)	**.015**
	No	42 (21.5)	153 (78.5)	
Total		**44 (18.7)**	**191 (81.3)**	

Almost nine-tenths of participants who self-rated their QoL as very poor had depression symptoms (87.2%). Over nine-tenths of all participants with low QoL in the physical domain had depression symptoms (93.9%). Over nine-tenths of participants with low QoL in the psychological domain had depression symptoms (95.7%). Having depressive symptoms was found significantly associated with all of the four domains of QoL **(Table 4)**.

Table 4. Association of quality of life of participants with presence of depression (N=465)

Quality of life	Categories	Mental health		*p*-value
		Normal	Depressed	
		N (%)	N (%)	
How would you rate your quality of life?	Very poor	5 (12.8)	34 (87.2)	**<.001**
	Poor	4 (4.7)	81 (95.3)	
	Neither poor nor good	24 (13.9)	149 (86.1)	
	Good	40 (31.0)	89 (69)	
	Very good	17 (43.6)	22 (56.4)	
How satisfied are you with your health?	Very dissatisfied	1 (3.0)	32 (97.0)	**<.001**
	Dissatisfied	5 (7.6)	61 (92.4)	
	Neither satisfied nor dissatisfied	21 (14.2)	127 (85.8)	
	Satisfied	31 (25.2)	92 (74.8)	
	Very satisfied	32 (33.7)	63 (66.3)	
Physical domain	Low	15 (6.1)	230 (93.9)	**<.001**
	Moderate	39 (24.8)	118 (75.2)	
	High	36 (57.1)	27 (42.9)	
Psychological domain	Low	11 (4.3)	242 (95.7)	**<.001**
	Moderate	43 (27.4)	114 (72.6)	
	High	36 (65.5)	119 (34.5)	
Social relationship domain	Low	28 (11.2)	221 (88.8)	**<.001**
	Moderate	35 (23.3)	115 (76.7)	
	High	27 (40.9)	39 (59.1)	
Environment domain	Low	43 (12.9)	291 (87.1)	**<.001**
	Moderate	39 (34.2)	76 (65.8)	
	High	8 (47.1)	9 (52.9)	
Total		**90 (19.4)**	**375 (80.6)**	

Two-thirds of participants who rated their QoL as very poor (66.7%) had a mild to extremely severe level of anxiety. Over nine-tenths of participants with low QoL in the physical domain (93.8%) had anxiety symptoms and 93.4% of participants with low QoL in the psychological domain had anxiety symptoms. The presence of mild to extremely severe level of anxiety among the participants of the present study was found significantly associated with all of the four domains of QoL **(Table 5)**.

Table 5. Association of quality of life of participants with presence of anxiety (N=465)

Quality of life	Categories	Mental health		*p*-value
		Normal	Anxious	
		N (%)	N (%)	
How would you rate your quality of life?	Very poor	7 (33.3)	14 (66.7)	**<.001**
	Poor	2 (4.2)	46 (95.8)	
	Neither poor nor good	8 (9.8)	74 (90.2)	
	Good	15 (24.6)	46 (75.4)	
	Very good	12 (52.2)	11 (47.8)	
How satisfied are you with your health?	Very dissatisfied	1 (6.7)	14 (93.3)	**<.001**
	Dissatisfied	2 (5.6)	34 (94.4)	
	Neither satisfied nor dissatisfied	10 (11.4)	78 (88.6)	
	Satisfied	9 (17.6)	42 (82.4)	
	Very satisfied	22 (48.9)	23 (51.1)	
Physical domain	Low	9 (6.2)	137 (93.8)	**<.001**
	Moderate	24 (33.3)	48 (66.7)	
	High	11 (64.7)	6 (35.3)	
Psychological domain	Low	10 (6.6)	142 (93.4)	**<.001**
	Moderate	18 (30.5)	41 (69.5)	
	High	16 (66.7)	8 (33.3)	
Social relationship domain	Low	17 (12.0)	125 (88.0)	**<.001**
	Moderate	17 (23.9)	54 (76.1)	
	High	10 (45.5)	12 (54.5)	
Environment domain	Low	19 (10.6)	160 (89.4)	**<.001**
	Moderate	22 (43.1)	29 (56.9)	
	High	3 (60.0)	2 (40.0)	
Total		**44 (18.7)**	**191 (81.3)**	

Multiple logistic regression analysis was run to see which variables predicted depressive symptoms comprising the following variables: age, marital status, educational level, occupation, income, and QoL domains. Income, physical domain and psychological domain of quality of life were found significant **(Table 6)**.

Table 6: Multiple logistic regression analysis of depression on participants' characteristics and their quality of life (N=465)

Variable	aOR [95% CI]	*p*-value
Age	1.025 [0.984, 1.069]	.225
Marital status		
Unmarried/single	Ref	
Married	0.853 [0.433, 1.677]	.645
Educational level		
Illiterate	1.541 [0.525, 4.519]	.431
Primary/secondary school	1.888 [0.642, 5.548]	.248
High school/university	1.577 [0.749, 3.316]	.230
University	Ref.	
Occupation	1.200 [0.589, 2.445]	.615
Occupied	Ref.	
Non-occupied	1.200 [0.589, 2.445]	.615

Income		
Low	Ref	
High	0.618 [0.413, 0.926]	**.020**
Physical domain		
Low quality of life	4.391 [1.748, 11.029]	**.002**
Moderate quality of life	2.135 [1.031, 4.419]	**.041**
High quality of life	Ref.	
Social relationship domain		
Low quality of life	0.900 [0.364, 2.224]	.820
Moderate quality of life	1.342 [0.601, 2.998]	.473
High quality of life	Ref.	
Environment domain		
Low quality of life	0.581 [0.152, 2.216]	.427
Moderate quality of life	0.556 [0.155, 1.986]	.366
High quality of life	Ref.	
Psychological domain		
Low quality of life	22.168 [7.502, 65.495]	**<.001**
Moderate quality of life	3.771 [1.700, 8.364]	**.001**
High quality of life	Ref.	

Discussion

In the present study examining Afghan women under the rule of the Taliban government in Afghanistan, only one-tenth (9.5%) of the participants reported a normal state of mental health with nine-tenths of the total sample reporting symptoms associated with depression and/or anxiety. Previous studies have also found that gender plays a role in the mental health status and that females experience higher levels of mental health disorders compared to males [27]. More specifically, the findings of the present study indicated that 80.6% of the participants had symptoms of depression. The data also showed that 81.3% of the participants reported symptoms associated with mild to severe anxiety. Additionally, 87.2% of participants who self-reported having very poor QoL had symptoms of depression. The data show that 66.7% of participants who self-reported very poor QoL, also showed symptoms of anxiety. The factors that were significantly associated with both depression and anxiety were age (being older), number of children (having more children), education level (being less educated), experiencing a traumatic event in the past month, and feeling physically ill in the past month.

The estimated percentage of the presence of symptoms of depression in the present study falls within the range reported by WHO (1 in 10 individuals) in the conflict zone areas. However, almost 8 in 10 were reported in the present study which is higher than that reported by the WHO [24]. Old age (25-70 years) was more associated with depression symptoms (86.3%) in comparison to younger age (15-24 years) with 75.9%. On the contrary, the findings of an interview survey from 2019 by the Centers for Disease Control and Prevention (CDC) indicated that 21.0% of the adults aged between 18-29 years had depression symptoms compared to the 16.8% of adults aged between 30-44 years [32]. Increased depression symptoms (91.8%) were found among participants with more children (5-12) compared to participants with less children (1-5) who in turn had a higher percentage of depression symptoms (85.3%) than those with no children (76.4%). This finding contrasts the findings of a cross-sectional study on depression in Chinese adults which reported that each additional child amounted to a 9% lower risk of major depression among women [33].

The presence of depression symptoms was also significantly related to education level. More specifically, participants who were illiterate reported higher depression (91.1%) in comparison to those with university

education (74.9%). This finding concurs with a study in Europe where a higher level of education was found to be associated with lower odds of depression. [34]

A highly significant factor related to presence of depression was found to be a traumatic event that participants has experienced during the past month. More specifically, 86.4% of those who said they experienced a traumatic event reported symptoms of depression compared to 66.2% who had depression but did not report a traumatic event. Similarly, results from an Italian study among male asylum seekers and refugees found that the number of traumatic events was a risk factor for depression [35]. Finally, the findings of the present study showed that there was a higher level of depression symptoms among participants who reported they had been physically ill in the past month (89.9%) in comparison to those who did not (77.5%). Similarly, previous studies have shown that chronic disease and pain [36], as well as respiratory and digestive symptoms [37] increase the risk of developing depression.

Among the 81.3% of participants with anxiety symptoms, those who were older (25-70 years) reported a higher percentage of anxiety (89.9%) in comparison to those who were younger (15-24 years) and reported a lower percentage of anxiety (75.0%). This is in contrast with a study in Iran which reported that the prevalence of anxiety was higher among younger women compared to older women [44]. Moreover, another study conducted during the COVID-19 pandemic found that compared to the middle and old age groups, the younger age group had higher levels of anxiety [38]. Another significant factor associated with anxiety symptoms was marital status where widowed/divorced participants reported the highest percentage of anxiety (92.3%) compared to two other groups (married and single). Married women reported higher levels of depression symptoms (90.5%) compared to single women (75.7%). This finding is consistent with previous studies reporting that being divorced or widowed are among significant predictors of anxiety among women [18, 34].

With regards to education, participants who were educated to at least university level reported the lowest anxiety levels (75.4%) and all the participants who were illiterate or had studied up to secondary school reported anxiety symptoms (100%). This finding is consistent with previous studies reporting that women with lesser education are more likely to develop anxiety [45]. Moreover, in the present study, the following groups reported higher levels of anxiety compared to their counterparts: those who were residents of Kabul (84.7%) in comparison to those who lived in Mazar-e-Sharif (75.0%), those who had jobs (89.8%) in comparison to those who did not have a job (75.2%), those who experienced a traumatic event during the past month (85.3%) compared to those who did not (74.1%), and those who had been physically ill in the past month (95.0%) compared to those who had not (78.5%).

The findings showed that 87.2% of the participants with very poor QoL also had symptoms of depression. Two-thirds of participants with very poor QoL had symptoms of anxiety ranging from mild to severe levels (66.7%). Collectively, these findings are consistent with previous studies reporting that QoL is lower among individuals with anxiety and depression [22]. Mild to severe levels of anxiety were found to be significantly related to all four domains of the QoL (physical domain, psychological domain, social relationship domain, environment domain). This finding is consistent with the results of a literature review showing that anxiety disorders are associated with global, social, occupational, and physical domains of quality of life. [40]. However, according to a study on the mental health of older age groups, anxiety was found to be associated with three domains of QoL (psychological, social, and environmental), but not with the physical domain [41].

In multivariable analysis, the only variables that were significantly associated with depression symptoms were experiencing traumatic events during the past month, other individuals' behavior, QoL psychological domain, QoL social relationship domain, and the presence of anxiety. All other variables such as marital status, physical illness, self-rated QoL, QoL physical domain, and QoL environment domain had no significant contribution in the regression model. Moreover, previous research has shown that depression has a significant impact on all domains of quality of life [42]. The result regarding the marital status is consistent with a cross-sectional study among Saudi medical students reporting there was no association

between the student's marital status and the reported frequency of their depression symptoms [43]. According to a 2009 study (before the return of Taliban), half the women had depression symptoms and more than a half had symptoms related to anxiety, which are much lower rates than those in the present study (i.e., nine-tenths of the total sample reported symptoms of depression or anxiety) [44].

Limitations

The present study has several limitations. There are very few studies that have examined the mental health of Afghan women since the Taliban returned to power which limits the ability to compare the results here to other studies and find any meaningful trends. Another limitation of the present study is that the study did not address the date of onset of mental health symptoms or poor QoL. Therefore, it is not known whether the participants' mental health condition changed since before the Taliban takeover. The findings provided estimates of depression and anxiety among Afghan women and the association of these mental health disorders with QoL but all the data were self-report and subject to a range of methods biases. Moreover, the study was cross-sectional, therefore it is not possible to determine any causality between the variables examined in the present study.

The present study's findings suggest that mental health illnesses can be comorbid with low QoL among Afghan women, and immediate attention is required to address the mental health issues faced by Afghan women under the current Taliban government. Further studies are needed to assess the possibility of gender differences in mental health and QoL by studying cohorts of both men and women under Taliban rule. Moreover, future studies should investigate the potential sources of therapy and their availability to the general population of Afghan women.

Conclusion

The prevalence of depression is high women living under the government of the Taliban in Afghanistan. Considering the high prevalence of depression, anxiety and their impact on quality of life and the overall quality of healthcare services, the international health organizations should implement programs for regular screening of depression, anxiety, psychological counselling services for vulnerable women living under the government of the Taliban.

Ethical considerations

The Afghanistan Center for Epidemiological Studies – Ethical Committee provided the ethical approval to conduct this study (reference number #45.001; Nov 1, 2021). During the initial contact with the participants, a description of the study was presented to them. Written or verbal Informed consent was obtained from all the participants in the present study. Participants were informed that they could discontinue with the interview at any point in time from the study.

Authors Contribution: AN and AQM designed the study. AE, BB, MN, IM, and MN collected the data. AN and BKP analyzed the data. AN, AQM, MA prepared the draft of the manuscript. SS and MG critically reviewed, rewrote, edited, and finalized the manuscript. All authors reviewed the manuscript.

Funding: This study did not receive external funding.

Declaration of Interests: Authors of this study declare that there is no competing interest.

Availability of data: The dataset is available on reasonable request.

Acknowledgement: We would like to express our sincere gratitude to all the participants who enrolled in this study.

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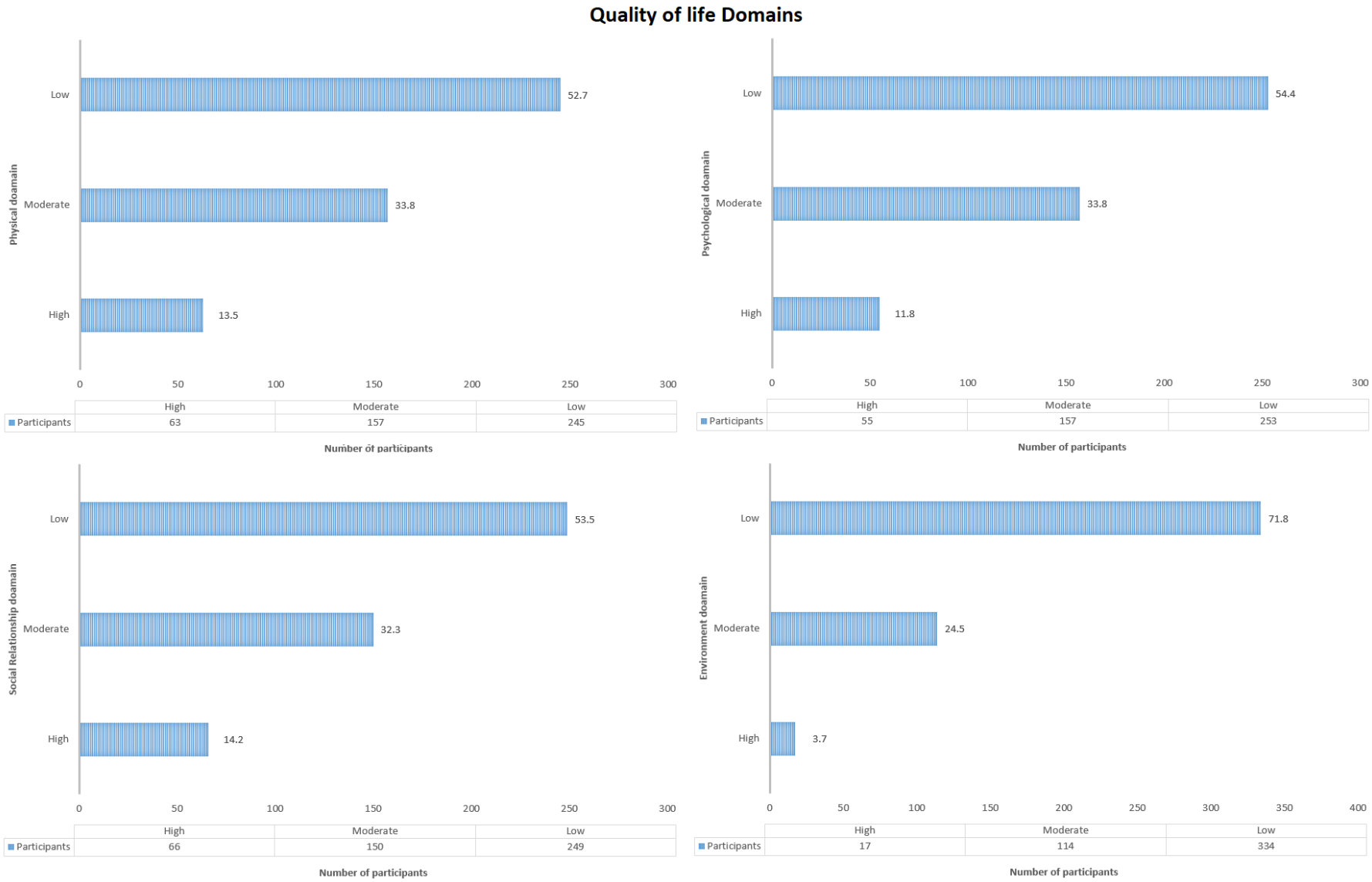
Fig 1. Quality of life of women under the Taliban government (N=465)



STROBE Statement—Checklist of items that should be included in reports of ***cross-sectional studies***

	Item No	Recommendation	Page No
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	3-4
Objectives	3	State specific objectives, including any prespecified hypotheses	4
Methods			
Study design	4	Present key elements of study design early in the paper	4
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	4
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	4-5
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	4-5
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	*4-5*
Bias	9	Describe any efforts to address potential sources of bias	4-5
Study size	10	Explain how the study size was arrived at	4-5
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	4-5
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	5
		(*b*) Describe any methods used to examine subgroups and interactions	5
		(*c*) Explain how missing data were addressed	5
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	5
		(*e*) Describe any sensitivity analyses	5
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	5
		(b) Give reasons for non-participation at each stage	5
		(c) Consider use of a flow diagram	5
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	6
		(b) Indicate number of participants with missing data for each variable of interest	
Outcome data	15*	Report numbers of outcome events or summary measures	6
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	6-11

		(*b*) Report category boundaries when continuous variables were categorized	6-11
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	6-11
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	6-11
Discussion			
Key results	18	Summarise key results with reference to study objectives	11-13
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	13
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	13
Generalisability	21	Discuss the generalisability (external validity) of the study results	13
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	13

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

BMJ Open

Depression, Anxiety, and Quality of Life of Afghan Women Living in Urban Areas Under the Taliban Government: A cross-sectional study

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2023-071939.R1
Article Type:	Original research
Date Submitted by the Author:	28-Mar-2023
Complete List of Authors:	Neyazi, Ahmad; Afghanistan Center for Epidemiological Studies Padhi, Bijaya; Post Graduate Institute of Medical Education and Research, Community Medicine and School of Public Health Mohammadi, Ab. Qadim; Herat Regional Hospital Ahmadi, Mahsa; George Mason University, Department of Neuroscience Erfan, Adiba; Afghanistan Medical Students Association Bashiri, Bahara; Afghanistan Medical Students Association Neyazi, Mehrab; Atefi Institute of Health Sciences Ishaqzada, Marjina; Afghanistan Medical Students Association Noormohammadi, Morteza; Afghanistan Center for Epidemiological Studies Griffiths, Mark; Nottingham Trent University, Social Sciences
Primary Subject Heading:	Public health
Secondary Subject Heading:	Mental health
Keywords:	Quality of Life, Depression & mood disorders < PSYCHIATRY, Anxiety disorders < PSYCHIATRY

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Depression, Anxiety, and Quality of Life of Afghan Women Living in Urban Areas Under the Taliban Government: A cross-sectional study

Ahmad Neyazi*
Afghanistan Center for Epidemiological Studies, Herat, Afghanistan.
Bijaya Kumar Padhi
Department of Community Medicine and School of Public Health, Postgraduate Institute of Medical Education and Research, Chandigarh, India.
Ab. Qadim Mohammadi
Mental Health Ward, Herat Regional Hospital, Herat, Afghanistan.
Mahsa Ahmadi
Department of Neuroscience, George Mason University, Fairfax, VA, United States.
Adiba Erfan
Afghanistan Medical Students Association, Mazar-e-Sharif, Afghanistan.
Bahara Bashiri
Afghanistan Medical Students Association, Mazar-e-Sharif, Afghanistan.
Mehrab Neyazi
Faculty of Pharmacy, Atefi Institute of Health Sciences, Herat, Afghanistan
Marjina Ishaqzada
Afghanistan Medical Students Association, Kabul, Afghanistan.
Morteza Noormohammadi
Afghanistan Center for Epidemiological Studies, Herat, Afghanistan.
Mark D. Griffiths
Department of Psychology, Nottingham Trent University, United Kingdom.

*** Corresponding author: Ahmad Neyazi**

Afghanistan Center for Epidemiological Studies, Herat, Afghanistan.
ahmadniazi000@gmail.com

ORCID: 0000-0002-6181-6164

Word count: 4308

Abstract

Objectives: According to the World Health Organization (WHO), depression is a common mental health illness that is characterized by a persistent feeling of sadness and loss of interest. The present study examined the association of two mental health variables (i.e., depression, anxiety) with quality of life (QoL), and the socio-demographic characteristics of Afghan women living in urban areas under the rule of Taliban government in Afghanistan.

Design: Cross-sectional study administered between Nov 10, 2021 to Dec 25 2021 among women.

Setting: Across major provinces of Afghanistan (Herat, Mazar-e-Sharif, Kabul, and Samangan).

Measurements: Data were collected using a pretested structured questionnaire. Data entry was carried out using *Microsoft Excel 2016*. And then exported to IBM SPSS version 26 for Microsoft Windows. Logistic regression models were used to examine the association of depression, anxiety with QoL and socio-demographic characteristics among women (N=438).

Results: The prevalence of depression symptoms were 80.4%, and mild to extremely severe anxiety was 81.0%. Depression symptoms among Afghan women were associated with being older, having more children, lower education level, other individuals' bad behavior, bad events experienced in the past month, and feeling physically ill. Multiple regression analysis indicated that low monthly household income (AOR: 2.260; 95%CI: 1.179-4.331, *p*=.014) poor physical domain of quality of life (AOR:4.436; 95%CI: 1.748-11.256, *p*=.002), and poor psychological domain of quality of life (AOR: 23.499; 95%CI: 7.737-71.369, *p*<.001) were significantly associated with depression.

Conclusion: The prevalence of depression was high women living under the government of the Taliban in Afghanistan. Considering the high prevalence of depression, anxiety, and their impact on quality of life and the overall quality of healthcare services, international health organizations should implement programs for regular screening of depression and anxiety, and there should be psychological counselling services available for vulnerable women living under the government of the Taliban.

Keywords: depression, anxiety, quality of life, women, Taliban, Afghanistan.

Article Summary

Strengths and Limitations of this Study

- This study examined the association of depression, anxiety with quality of life, and the socio-demographic characteristics of Afghan women
- Validated questionnaires and scales was used for this study.
- The findings provided estimates of depression and anxiety among Afghan women and the association of these mental health disorders with quality of life but all the data were self-report and subject to a range of methods biases.
- This study was that the sample is not representative of all Afghan women.

Introduction

According to the World Health Organization (WHO), depression is a common mental health illness that is characterized by a persistent feeling of sadness and loss of interest [1]. Symptoms include fatigue, poor concentration, and disrupted sleep and appetite [1]. The WHO also states that nearly 5% of adults worldwide suffer from depression. It also notes that depression can limit an individual's capacity to function and live a fulfilling life. Life events and difficulties such as the death or loss of a loved one, financial issues, conflicts, and poor social support can trigger depression [2]. According to the WHO, depression is a leading cause of disability, and disproportionately affects women [1]. Consequences can include suicide and self-destructive behaviors. In relation to gender differences in depression, a group of researchers in China found that genetic factors and the differential heritability of depression between men and women, may be one of the reasons why women are more susceptible to depression than men [3]. Moreover, women can experience depression during pregnancy [4], but also, according to Guo et al., 1 in 20 women in the US of reproductive age who are not pregnant also suffer from major depression [5].

Anxiety is another common mental health disorder [6]. It is characterized by feelings of tension and anxious thoughts, as well as elevated blood pressure [7]. Normally, anxiety is a natural emotion needed for survival. However, excessive anxiety, particularly in the absence of any threat, is considered a mental illness [6]. Cognitive symptoms include difficulty speaking, poor concentration, poor memory, and confusion [8]. Moreover, physiological symptoms include shaking, sweating, dizziness, nausea, and increased heart rate.

The WHO defines the quality of life (QoL) as an individual's view of their position in life in relation to their goals, standards, and concerns and within the framework of their culture and value systems [9]. Quality of life (QoL) describes the overall well-being of an individual including the positive and negative aspects of their life [10]. These aspects include physical, mental, and spiritual health as well as education status, safety, freedom, relationships, and wealth. QoL is becoming more of a subjective individual perception and less objective [11].

Women continue to face many obstacles and challenges in their pursuit of equality. In many parts of the world, women are still denied basic rights and freedoms, including the right to education, the right to work, and the right to vote, as well as subjugation to men within family settings. Even in more progressive societies, women continue to face discrimination and inequality in the workplace, in politics, and in their personal lives [12]. When the Taliban government took over in 2021, the country faced an economic, food, and health crisis. The retreat of international donors and increased sanctions by the international community led to the collapse of the economy, high unemployment, food insecurity, and malnutrition. Moreover, under the Taliban government, women have been marginalized. Moreover, with more than half of Afghanistan's population now living below the poverty line, the situation is even worse for girls and women [13]. Under the Taliban government, women are limited in education, employment, mobility, political participation, healthcare, and public presence [14]. These conditions can exacerbate already existing mental health disorders among women. Along with other factors, COVID-19 is likely to have had a negative impact on women's mental health. With many schools and daycare centers closed, women had to take on additional responsibilities such as caring for children and/or elderly family members, often while trying to work from home. This increased workload can lead to feelings of exhaustion, frustration, and burnout, all of which can take a toll on mental health [15]. Nearly 50% of those with depression are also diagnosed with anxiety disorders [16]. Anxiety can also run across generations. In a Swedish study, researchers found that women whose mothers were diagnosed with anxiety were more than twice as likely to experience anxiety disorders themselves [17]. Moreover, if both the mother and grandmother had an anxiety disorder, the odds of a child being diagnosed with anxiety increases threefold [18]. Anxiety and depression are highly comorbid mental health disorders, and their symptoms commonly overlap [18].

Among the causes of depression are stressful events, family history, specific personality traits (e.g., neuroticism), loneliness, and childbirth [19]. On the other hand, factors such as traumatic life events or underlying health issues can lead to anxiety disorders [20]. A national survey on depression and anxiety in Afghanistan (where the present study was carried out), reported that the Afghan population was heavily exposed to traumatic events, with 64.7% having personally encountered at least one traumatic life event [21]. A study conducted by Najafipour et al. in Iran in 2021, reported that the likelihood of developing anxiety and depression was 2.26 and 2.56 times higher among women compared to men, respectively [22]. Najafipour et al. also noted that research into QoL can be diverse regarding research groups, designs, and measures.

Moreover, QoL is mainly studied in developed countries. However, the cross-cultural significance of QoL is not clear. According to a global survey in 2020, QoL was higher among older male adults compared to older female adults across many nations [23-24]. In relation to the factors affecting QoL, it has been found that socio-economic factors play an important role in the QoL such that the QoL among individuals in developing countries is significantly impacted by a lack of financial support [25]. Another study noted that QoL is lower among individuals with anxiety and depression even before the onset of depression [26]. However, their QoL further drops with the onset of mental health disorders [26]. In relation to the factors affecting QoL among patients with depression, Cho et al. reported that *"older age, lower level of education, lower income, worse subjective perception of health, unemployment, obesity and mental health struggles"* are related to the lower QoL among patients experiencing depression [27].

According to the WHO, one in ten individuals living in conflict zones experience moderate or severe mental health disorders and there is still a lack of awareness around mental health in many countries [28]. After two decades of war, the Taliban returned to power in Afghanistan in 2021 [29]. Due to such conflicts and wars, the mental health of Afghan youth has been negatively impacted. A 2021 report noted that after decades of war and due to the current political situation in Afghanistan, immediate attention and investment is required for mental health [30]. Moreover, due to the social norms in Afghanistan, women and girls face additional obstacles. A cross-sectional study conducted in 2022, found that gender plays a role in the mental health of high school students such that girls experienced higher levels of anxiety and depression in comparison to boys [31]. Another recent 2022 study examining mental health and suicidality among Afghan university students reported that 69.7% had clinical signs of depression after the takeover of Taliban in 2021 [32]. Based on a report by the Canadian Women for Women in Afghanistan, in post-Taliban era in 2002, the prevalence of depression was reported to be 73% among Afghan women. This report also noted that 86% of women had significant anxiety symptoms [33]. Another study conducted in 2021 shows that 79.1% of Afghan women were depressed before the fall of the government to the Taliban [34].

Many studies have emphasized the importance of mental health [35-37]. However, under the rule of the Taliban government in Afghanistan, no previous study has examined depression, anxiety, and QoL all together and specifically among women under the rule of Taliban. The present study is the first to investigate depression, anxiety, and QoL among women simultaneously. It also examined the factors associated with depression, anxiety, and QoL. Finally, the study examined the association of the two mental health variables (depression, anxiety) with QoL, and the socio-demographic characteristics of Afghan women living under the rule of Taliban in urban areas.

Methods

Participants, study design, and sample

A cross-sectional study was conducted by the Afghanistan Center for Epidemiological studies. The study participants (N=438) women aged 15-70 years were recruited randomly across major provinces (Herat, Mazar-e-Sharif, Kabul, and Samangan) of Afghanistan. Participants were interviewed face-to-face and their answers were recorded by the data collectors. The eligibility criteria to participate in the present

study were: (i) being female; (ii) being 15 years old or older; (iii) being able to understand the Dari language, and (iv) providing written or verbal informed consent for adults (aged 18 years or above) from themselves and for adolescents (aged 15 -18 years) from their parents. The target sample size of participants was determined using the formula $N = Z\alpha 2P(1 - P)/d^2$, in which $\alpha = 0.05$ and $Z\alpha = 1.96$, and the estimated acceptable margin of error for proportion d was 5%. The proportion of women with depression was estimated at 80%, based on the available literature [34]. The sample size was calculated using OpenEpi software (v3.01).

Instruments

A survey consisting of four sub-sections was used in the present study. The sub-sections assessed: socio-demographics, depression, anxiety, and quality of life.

The socio-demographic section included questions concerning age, height, weight, marital status, number of children, province of residency, educational level, monthly household income, occupation, individual behavior (how good or bad other people behaved with the participants during the past month), Taliban's behavior (how good or bad the Taliban forces behaved with the participants during the past month), whether a traumatic event had occurred during the past month, and feeling physically ill during the past month.

In order to assess participants' symptoms of depression, the Dari version of the 20-item Center for Epidemiological Studies Depression Scale (CES-D) was used [38-39]. The CES-D comprises three sub-scales (negative items, positive items, and interpersonal relationships). All of the items (e.g., *"I felt everything I did was an effort"*) are scored from 0 ("*rarely or none of the time/less than one day during the past week*") to 3 ("*Most of all of the time/5-7 days during the past week").* The scores range from 0 to 60. The standard cut-off score was used as follows: a score between 0 to 15 is considered as normal. Participants with a score higher than 15 are considered as having depression symptoms. Cronbach's alpha in the present study was 0.87.

In order to assess participants' symptoms of anxiety, the 14-item subscale of the Dari version of the Depression, Anxiety, Stress Scale-42 (DASS-42) was used [40]. All of the items (e.g., *"I had a feeling of faintness"*) are scored from 0 ("*did not apply to me at all*") to 3 ("*Applied to me very much, or most of the time*"). The scores range from 0 to 42 which indicate one of the five states of anxiety: a score between 0 to 7 is considered as normal; 8 to 9 indicates mild anxiety; 10 to 14 indicates moderate anxiety; 15-19 indicates severe anxiety; and a score of 20 or higher indicates extremely severe anxiety. Cronbach's alpha in the present study was 0.83.

In order to assess participants' quality of life, the Dari language validated version of the World Health Organization Quality of Life–BREF (WHOQOL-BREF-26) was used [41]. The WHOQOL-BREF-26 comprises four subscales (physical health domain, psychological health domain, social relationships domain, and environment domain). All of the items (e.g., *"To what extent do you feel that physical pain prevents you from doing what you need to do?"*) are scored from 1 (*not at all*) to 5 (*an extreme amount*). In order to make scores comparable with the WHOQOL-100, raw scores were converted into the transformed score to range within 0-100. For each subscale of the WHOQOL-BREF 26, a total score of less than 46 indicates low QoL; 46 to 65 indicates moderate QoL; and higher than 65 indicates high QoL [42]. Cronbach's alpha in the present study was 0.85.

Analysis

Data entry was carried out using *Microsoft Excel 2016*. The analysis was performed with the *IBM SPSS version 26.0 for Windows*. Descriptive statistics included means, standard deviations, frequencies, and percentages. Associations between variables were evaluated using chi-square tests. Multiple regression analysis was used to examine independent socio-demographics, sub-groups of the QoL, and anxiety with

the presence of depression. All of the variables with a *p*-value less than 0.05 were considered as significant.

Patient and public involvement statement

Patients or the public were not involved in the design, conduct, reporting and dissemination plans of our research.

Results

Socio-demographics

Two-thirds of the participants' BMI were in normal weight range (72.4%). More than half of the participants were single (54.3%). Almost half of the participants reported that their monthly household income was less than the equivalent of $50 (US) (54.3%). Almost two-thirds of the participants were unemployed (69.2%) **(Table 1)**.

Table 1. Socio-demographic characteristics in the study sample (N=438)

Characteristic	Categories	Number (N)	Percentage (%)
Age group	15–24-years	245	55.9
	25–70-years	193	44.1
BMI	Underweight	31	7.1
	Normal weight	317	72.4
	Overweight	69	15.8
	Obesity	21	4.8
Marital status	Single	238	54.3
	Married	175	40.0
	Widow/divorced	25	5.7
Number of children	None	274	62.6
	1-5	120	27.4
	5-12	44	10.0
Province	Herat	91	20.8
	Kabul	113	25.8
	Mazar-e-Sharif	117	26.7
	Samangan	117	26.7
Education level	Illiterate	77	17.6
	Primary school	19	4.3
	Secondary school	20	4.6
	High school	97	22.1
	University	255	51.4
Monthly household income	Less than $50	238	54.3
	$50 - $100	89	20.3
	$100 - $200	74	16.9
	$200 - $300	32	7.3
	More than $300	5	1.1
Occupation	Employed	135	30.8
	Unemployed	303	69.2
Individuals' behavior in the past month	Good	339	77.4
	Bad	99	22.6
Taliban's behavior in the past month	Good	162	37.0
	Bad	276	63.0

Experienced a bad event in the past month	Yes	314	71.7
	No	124	28.3
Feeling physically ill in the past month	Yes	104	23.7
	No	334	76.3
Total		**438**	**100.0**

The portions of participants with a high QoL in the four domains was as follows: physical health domain (13.0%), psychological health domain (11.2%), social relationship domain (14.4%), and environment domain (3.7%) category **(Figure 1)**.

<Figure 1>

Four-fifths of the participants had symptoms of depression (80.4%). Symptoms of depression were significantly related to (i) age (older women more likely to depressed), (ii) number of children (women with more children more likely to be depressed), (iii) educational level (women with lower education more likely to be depressed), (iv) other individuals' behavior (women who were treated badly by other Individuals in the past month more likely to be depressed), (v) traumatic events (women experiencing a traumatic event in the past month more likely to be depressed), and (vi) feeling physically ill (women feeling physically ill more likely to be depressed compared to those who did not) **(Table 2).**

Table 2. Association of depression with participants socio-demographic characteristics (n=438)

Characteristic	**Categories**	**Mental health**		***p*-value**
		Normal	Depressed	
		N (%)	N (%)	
Age group	15–24-years	58 (23.7)	187 (76.3)	**.017**
	25–70-years	28 (14.5)	165 (85.5)	
BMI	Underweight	7 (22.6)	24 (77.4)	.842
	Normal weight	64 (20.2)	253 (79.8)	
	Overweight	12 (17.4)	57 (82.6)	
	Obesity	3 (14.3)	18 (85.7)	
Marital status	Single	54 (22.7)	184 (77.3)	.120
	Married	30 (17.1)	145 (82.9)	
	Widow/divorced	2 (8.0)	23 (92.0)	
Number of children	None	64 (23.4)	210 (76.6)	**.018**
	1-5	19 (15.8)	101 (84.2)	
	5-12	3 (6.8)	41 (93.2)	
Province	Herat	22 (24.2)	69 (75.8)	.120
	Kabul	14 (12.4)	99 (87.6)	
	Mazar-e-Sharif	27 (23.1)	90 (76.9)	
	Samangan	23 (19.7)	94 (80.3)	
Education level	Illiterate	6 (7.8)	71 (92.2)	**.007**
	Primary school	1 (5.3)	18 (94.7)	
	Secondary school	4 (20.0)	16 (80.0)	
	High school	18 (18.6)	79 (81.4)	
	University	57 (25.3)	168 (74.7)	
Monthly household income	Less than $50	37 (15.5)	201 (84.5)	.050
	$50 - $100	17 (19.1)	72 (80.9)	
	$100 - $200	20 (27.0)	54 (73.0)	
	$200 - $300	11 (34.4)	21 (65.6)	

	More than $300	1 (20.0)	4 (80.0)	
Occupation	Employed	24 (17.8)	111 (82.2)	.514
	Not employed	62 (20.5)	241 (79.5)	
Individuals' behavior in the past month	Good	79 (23.3)	260 (76.7)	**<.001**
	Bad	7 (7.1)	92 (92.9)	
Taliban's behavior in the past month	Good	38 (23.5)	124 (76.5)	.123
	Bad	48 (17.4)	228 (82.6)	
Experienced a bad event in the past month	Yes	44 (14.0)	270 (86.0)	**<.001**
	No	42 (33.9)	82 (66.1)	
Feeling physically ill in the past month	Yes	11 (10.6)	93 (89.4)	**.008**
	No	75 (22.5)	259 (77.5)	
Total		**86 (19.6)**	**352 (80.4)**	

Approximately four-fifths of the participants were found to have mild to extremely severe level of anxiety (81.0%). More specifically, 19.0% had no anxiety at all, 6.2% had mild anxiety, 22.6% had moderate anxiety, 21.7% had severe anxiety, and 30.5% had extremely severe anxiety. Symptoms of mild to severe anxiety were significantly related to (i) age (older women more likely to have anxiety), marital status (single women less likely to have anxiety), province (women living in Kabul more anxious than those living in Mazar-e-Sharif), educational level (women with lower education more likely to be anxious), occupation (unemployed women less likely to have anxiety), traumatic events (women experiencing a traumatic event in the past month more likely to have anxiety), and feeling sick (women feeling physically ill in the past month more likely to have anxiety than those who did not) **(Table 3).**

Table 3. Association of anxiety with participants socio-demographic characteristics (N=438)

Characteristic	**Categories**	**Mental health**		***p*-value**
		Normal	Anxious	
		N (%)	N (%)	
Age group	15–24-years	33 (24.4)	102 (75.6)	**.011**
	25–70-years	10 (11.0)	81 (89.0)	
BMI	Underweight	4 (21.1)	15 (78.9)	.962
	Normal weight	32 (19.5)	132 (80.5)	
	Overweight	5 (16.1)	26 (83.9)	
	Obesity	2 (16.7)	10 (83.3)	
Marital status	Single	35 (24.0)	111 (76.0)	**.037**
	Married	7 (10.4)	60 (89.6)	
	Widow/divorced	1 (7.7)	12 (92.3)	
Number of children	None	36 (23.4)	118 (76.6)	.050
	1-5	6 (10.2)	53 (89.8)	
	5-12	1 (7.7)	12 (92.3)	
Province	Kabul	15 (13.4)	97 (86.6)	**.032**
	Mazar-e-Sharif	28 (24.6)	86 (75.4)	
Education level	Illiterate	0 (0.0)	23 (100.0)	**.029**
	Primary school	0 (0.0)	9 (100.0)	
	Secondary school	0 (0.0)	3 (100.0)	
	High school	9 (17.6)	42 (82.4)	
	University	34 (24.3)	106 (75.7)	
Monthly household income	Less than $50	12 (13.5)	77 (86.5)	.054
	$50 - $100	7 (13.5)	45 (86.5)	

	$100 - $200	16 (28.1)	41 (71.9)	
	$200 - $300	8 (32.0)	17 (68.0)	
	More than $300	0 (0.0)	3 (100.0)	
Occupation	Employed	10 (10.5)	85 (89.5)	**.006**
	Unemployed	33 (25.2)	98 (74.8)	
Individuals' behavior in the past month	Good	35 (22.4)	121 (77.6)	.051
	Bad	8 (11.4)	62 (88.6)	
Taliban's behavior in the past month	Good	21 (19.4)	87 (80.6)	.878
	Bad	22 (18.6)	96 (81.4)	
Experienced a bad event in the past month	Yes	22 (15.2)	123 (84.8)	**.048**
	No	21 (25.9)	60 (74.1)	
Feeling physically ill in the past month	Yes	2 (5.6)	34 (94.4)	**.025**
	No	41 (21.6)	149 (78.4)	
Total		**43 (19.0)**	**183 (81.0)**	

Almost nine-tenths of participants who self-rated their QoL as very poor had depression symptoms (86.1%). Over nine-tenths of all participants with low QoL in the physical domain had depression symptoms (93.4%). Over nine-tenths of participants with low QoL in the psychological domain had depression symptoms (95.3%). Having depressive symptoms was found significantly associated with all of the four domains of QoL **(Table 4)**.

Table 4. Association of quality of life of participants with presence of depression (N=438)

Quality of life	**Categories**	**Mental health**		***p*-value**
		Normal	Depressed	
		N (%)	N (%)	
How would you rate your quality of life?	Very poor	5 (13.9)	31 (86.1)	**<.001**
	Poor	4 (5.1)	74 (94.9)	
	Neither poor nor good	23 (13.9)	142 (86.1)	
	Good	39 (31.5)	85 (68.5)	
	Very good	15 (42.9)	20 (57.1)	
How satisfied are you with your health?	Very dissatisfied	1 (3.2)	30 (96.8)	**<.001**
	Dissatisfied	5 (8.5)	54 (91.5)	
	Neither satisfied nor dissatisfied	21 (15.0)	119 (85.0)	
	Satisfied	31 (25.6)	90 (74.4)	
	Very satisfied	28 (32.2)	59 (67.8)	
Physical domain	Low	15 (6.6)	213 (93.4)	**<.001**
	Moderate	39 (25.5)	114 (74.5)	
	High	32 (56.1)	25 (43.9)	
Psychological domain	Low	11 (4.7)	225 (95.3)	**<.001**
	Moderate	43 (28.1)	110 (71.9)	
	High	32 (65.3)	17 (34.7)	
Social relationship domain	Low	28 (11.9)	208 (88.1)	**<.001**
	Moderate	33 (23.7)	106 (76.3)	
	High	25 (39.7)	38 (60.3)	
Environment domain	Low	43 (13.6)	273 (86.4)	**<.001**
	Moderate	36 (34.0)	70 (66.0)	
	High	7 (43.8)	9 (56.2)	
Total		**86 (19.6)**	**352 (80.4)**	

Two-thirds of participants who rated their QoL as very poor (63.2%) had a mild to extremely severe level of anxiety. Over nine-tenths of participants with low QoL in the physical domain (93.5%) had anxiety symptoms and 93.1% of participants with low QoL in the psychological domain had anxiety symptoms. The presence of mild to extremely severe level of anxiety among the participants of the present study was found significantly associated with all of the four domains of QoL **(Table 5)**.

Table 5. Association of quality of life of participants with presence of anxiety (N=438)

Quality of life	Categories	Mental health		*p*-value
		Normal	Anxious	
		N (%)	N (%)	
How would you rate your quality of life?	Very poor	7 (36.8)	12 (63.2)	**<.001**
	Poor	2 (4.3)	44 (95.7)	
	Neither poor nor good	8 (10.0)	72 (90.0)	
	Good	14 (23.7)	45 (76.3)	
	Very good	12 (54.5)	10 (45.5)	
How satisfied are you with your health?	Very dissatisfied	1 (6.7)	14 (93.3)	**<.001**
	Dissatisfied	2 (6.3)	30 (93.7)	
	Neither satisfied nor dissatisfied	10 (11.9)	74 (88.1)	
	Satisfied	9 (17.6)	42 (82.4)	
	Very satisfied	21 (47.7)	23 (52.3)	
Physical domain	Low	9 (6.5)	130 (93.5)	**<.001**
	Moderate	23 (32.9)	47 (67.1)	
	High	11 (64.7)	6 (35.3)	
Psychological domain	Low	10 (6.9)	134 (93.1)	**<.001**
	Moderate	17 (29.3)	41 (70.7)	
	High	16 (66.7)	8 (33.3)	
Social relationship domain	Low	17 (12.4)	120 (87.6)	**.001**
	Moderate	16 (23.9)	51 (76.1)	
	High	10 (45.5)	12 (54.5)	
Environment domain	Low	19 (11.0)	153 (89.0)	**<.001**
	Moderate	21 (42.9)	28 (57.1)	
	High	3 (60.0)	2 (40.0)	
Total		**43 (19.0)**	**183 (81.0)**	

Multiple logistic regression analysis was run to see which variables predicted depressive symptoms comprising the following variables: age, marital status, educational level, occupation, income, and QoL domains. Income, physical domain and psychological domain of quality of life were found significant **(Table 6)**.

Table 6: Multiple logistic regression analysis of depression on participants' characteristics and their quality of life (N=438)

Variable	AOR [95% CI]	*p*-value
Age	1.032 [0.987, 1.078]	.165
Marital status		
Unmarried/single	1.556 [0.745, 3.250]	.239
Married	Ref.	
Educational level		

Illiterate	1.914 [0.569, 6.439]	.294
Primary/secondary school	2.476 [0.768, 7.985]	.129
High school	1.810 [0.850, 3.857]	.124
University	Ref.	
Occupation		
Occupied	0.891 [0.424, 1.870]	.760
Non-occupied	Ref.	
Income		
Low	2.260 [1.179, 4.331]	**.014**
High	Ref.	
Physical domain		
Low quality of life	4.436 [1.748, 11.256]	**.002**
Moderate quality of life	2.280 [1.072, 4.849]	**.032**
High quality of life	Ref.	
Social relationship domain		
Low quality of life	0.902 [0.360, 2.261]	.825
Moderate quality of life	1.338 [0.584, 3.062]	.491
High quality of life	Ref.	
Environment domain		
Low quality of life	0.452 [0.109, 1.876]	.274
Moderate quality of life	0.438 [0.113, 1.700]	.233
High quality of life	Ref.	
Psychological domain		
Low quality of life	23.499 [7.737, 71.369]	**<.001**
Moderate quality of life	4.009 [1.736, 9.260]	**.001**
High quality of life	Ref.	

Discussion

In the present study examining Afghan women under the rule of the Taliban government in Afghanistan, only one-tenth (9.6%) of the participants reported a normal state of mental health with nine-tenths of the total sample reporting symptoms associated with depression and/or anxiety. Previous studies have also found that gender plays a role in the mental health status and that females experience higher levels of mental health disorders compared to males [31]. More specifically, the findings of the present study indicated that 80.4% of the participants had symptoms of depression. The data also showed that 81.0% of the participants reported symptoms associated with mild to severe anxiety. Additionally, 86.1% of participants who self-reported having very poor QoL had symptoms of depression. The data show that 63.2% of participants who self-reported very poor QoL, also showed symptoms of anxiety. The factors that were significantly associated with both depression and anxiety were age (being older), number of children (having more children), education level (being less educated), experienced a bad event in the past month, and feeling physically ill in the past month.

The estimated percentage of the presence of symptoms of depression in the present study falls within the range reported by WHO (1 in 10 individuals) in the conflict zone areas. However, almost 8 in 10 were reported in the present study which is higher than that reported by the WHO [28]. Old age (25-70 years) was more associated with depression symptoms (85.5%) in comparison to younger age (15-24 years) with 76.3%. On the contrary, the findings of an interview survey from 2019 by the Centers for Disease Control and Prevention (CDC) indicated that 21.0% of the adults aged between 18-29 years had depression symptoms compared to the 16.8% of adults aged between 30-44 years [43]. Increased depression symptoms (93.2%) were found among participants with more children (5-12) compared to participants

with less children (1-5) who in turn had a higher percentage of depression symptoms (84.2%) than those with no children (76.6%). This finding contrasts the findings of a cross-sectional study on depression in Chinese adults which reported that each additional child amounted to a 9% lower risk of major depression among women [44].

The presence of depression symptoms was also significantly related to education level. More specifically, participants who were illiterate reported higher depression (92.2%) in comparison to those with university education (74.7%). This finding concurs with a study in Europe where a higher level of education was found to be associated with lower odds of depression [45].

A highly significant factor related to presence of depression was found to be experiencing a bad event during the past month. More specifically, 86.0% of those who said they experienced a bad event in the past month reported symptoms of depression compared to 66.1% who had depression but did not report experiencing bad event in the past month. Similarly, results from an Italian study among male asylum seekers and refugees found that the number of traumatic events was a risk factor for depression [46]. Finally, the findings of the present study showed that there was a higher level of depression symptoms among participants who reported they had been physically ill in the past month (89.4%) in comparison to those who did not (77.5%). Similarly, previous studies have shown that chronic disease and pain [47], as well as respiratory and digestive symptoms [48] increase the risk of developing depression.

Among the 81.0% of participants with anxiety symptoms, those who were older (25-70 years) reported a higher percentage of anxiety (89.0%) in comparison to those who were younger (15-24 years) and reported a lower percentage of anxiety (75.6%). This is in contrast with a study in Iran which reported that the prevalence of anxiety was higher among younger women compared to older women [49]. Moreover, another study conducted during the COVID-19 pandemic found that compared to the middle and old age groups, the younger age group had higher levels of anxiety [50-51]. Another significant factor associated with anxiety symptoms was marital status where widowed/divorced participants reported the highest percentage of anxiety (92.3%) compared to two other groups (married and single). Married women reported higher levels of anxiety symptoms (89.6%) compared to single women (76.0%). This finding is consistent with previous studies reporting that being divorced or widowed are among significant predictors of anxiety among women [22, 45].

With regards to education, participants who were educated to at least university level reported the lowest anxiety levels (75.7%) and all the participants who were illiterate or had studied up to secondary school reported anxiety symptoms (100%). This finding is consistent with previous studies reporting that women with lesser education are more likely to develop anxiety [52]. Moreover, in the present study, the following groups reported higher levels of anxiety compared to their counterparts: those who were residents of Kabul (86.6%) in comparison to those who lived in Mazar-e-Sharif (75.4%), those who had jobs (89.5%) in comparison to those who did not have a job (74.8%), those who experienced a bad event in the past month (84.8%) compared to those who did not (74.1%), and those who had been physically ill in the past month (94.4%) compared to those who had not (78.4%).

The findings showed that 86.1% of the participants with very poor QoL also had symptoms of depression. Two-thirds of participants with very poor QoL had symptoms of anxiety ranging from mild to severe levels (63.2%). Collectively, these findings are consistent with previous studies reporting that QoL is lower among individuals with anxiety and depression [26]. Mild to severe levels of anxiety were found to be significantly related to all four domains of the QoL (physical domain, psychological domain, social relationship domain, environment domain). This finding is consistent with the results of a literature review showing that anxiety disorders are associated with global, social, occupational, and physical domains of quality of life [53]. However, according to a study on the mental health of older age groups, anxiety was found to be associated with three domains of QoL (psychological, social, and environmental), but not with the physical domain [54].

In multivariable analysis, the only variables that were significantly associated with depression symptoms were experiencing bad events during the past month, other individuals' behavior, QoL psychological domain, QoL social relationship domain, and the presence of anxiety. All other variables such as marital status, physical illness, self-rated QoL, QoL physical domain, and QoL environment domain had no significant contribution in the regression model. Moreover, previous research has shown that depression has a significant impact on all domains of quality of life [55]. The result regarding the marital status is consistent with a cross-sectional study among Saudi medical students reporting there was no association between the student's marital status and the reported frequency of their depression symptoms [56]. According to the 2015 national survey (before the return of Taliban), half the women had depression symptoms and more than a half had symptoms related to anxiety, also in another study conducted in major provinces of Afghanistan in 2021, almost four-fifth of the participants were found to have depression symptoms [34], which are much lower rates than those in the present study (i.e., nine-tenths of the total sample reported symptoms of depression or anxiety) [56].

Limitations

The present study has several limitations. There are very few studies that have examined the mental health of Afghan women since the Taliban returned to power which limits the ability to compare the results here to other studies and find any meaningful trends. Another limitation of the present study is that the study did not address the date of onset of mental health symptoms or poor QoL. Therefore, it is not known whether the participants' mental health condition changed since before the Taliban takeover. The findings provided estimates of depression and anxiety among Afghan women and the association of these mental health disorders with QoL but all the data were self-report and subject to a range of methods biases. Moreover, the study was cross-sectional, therefore it is not possible to determine any causality between the variables examined in the present study. Another limitation of this study was that the sample is not representative of all Afghan women. The sample only contained participants from urban areas and the sample had a much greater proportion of educated women than found nationally, and as a consequence a much smaller proportion of illiterate participants than that found nationally. Moreover, it is difficult to determine whether the results are indicative of a snapshot in a particularly fraught time in Afghanistan

The present study's findings suggest that mental health illnesses can be comorbid with low QoL among Afghan women, and immediate attention is required to address the mental health issues faced by Afghan women under the current Taliban government. Further studies are needed to assess the possibility of gender differences in mental health and QoL by studying cohorts of both men and women under Taliban rule. Moreover, future studies should investigate the potential sources of therapy and their availability to the general population of Afghan women.

Conclusion

The prevalence of depression is high women living under the government of the Taliban in Afghanistan. Considering the high prevalence of depression, anxiety and their impact on quality of life and the overall quality of healthcare services, the international health organizations should implement programs for regular screening of depression, anxiety, psychological counselling services for vulnerable women living under the government of the Taliban.

Ethical considerations

The Afghanistan Center for Epidemiological Studies – Ethical Committee provided the ethical approval to conduct this study (reference number #45.001; Nov 1, 2021). During the initial contact with the participants, a description of the study was presented to them. Written or verbal Informed consent was

obtained from all the participants in the present study. Participants were informed that they could discontinue with the interview at any point in time from the study.

Authors Contribution: AN and AQM designed the study. AE, BB, MN, MI, and MNo collected the data. AN and BKP analyzed the data. AN, AQM, MA prepared the draft of the manuscript. AN and MG critically reviewed, rewrote, edited, and finalized the manuscript. All authors reviewed the manuscript.

Funding: This study did not receive external funding.

Declaration of Interests: Authors of this study declare that there is no competing interest.

Availability of data: All data relevant to the study are included in the article or uploaded as supplementary information

Acknowledgement: We would like to express our sincere gratitude to all the participants who enrolled in this study.

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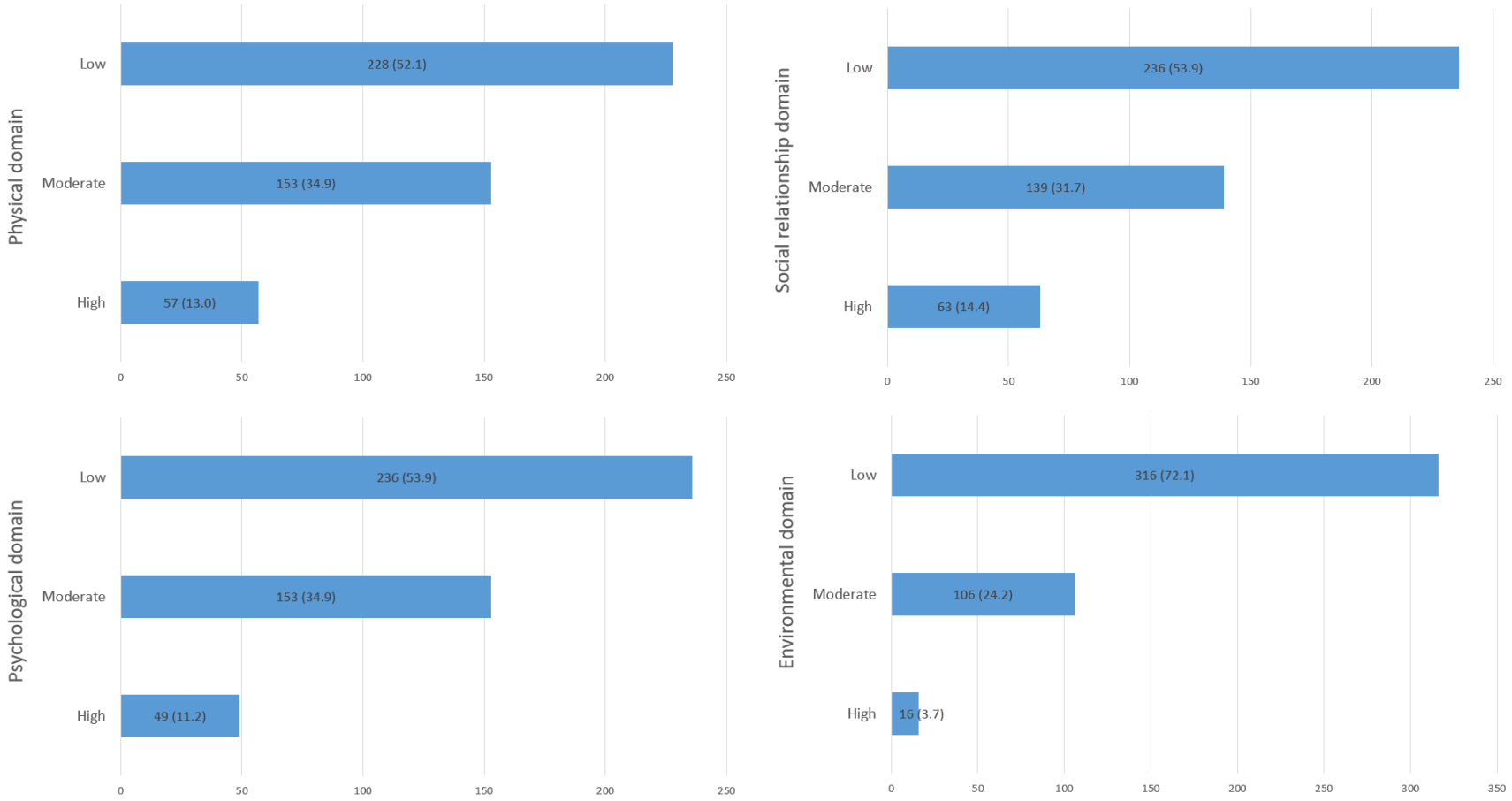
Quality of Life Domains
Physical domain
Low
228 (52.1)
Moderate
153 (34.9)
High
57 (13.0)
0
50
100
150
200
250
Social relationship domain
Low
236 (53.9)
Moderate
139 (31.7)
High
63 (14.4)
0
50
100
150
200
250
Psychological domain
Low
236 (53.9)
Moderate
153 (34.9)
High
49 (11.2)
0
50
100
150
200
250
Environmental domain
Low
316 (72.1)
Moderate
106 (24.2)
High
16 (3.7)
0
50
100
150
200
250
300
350

STROBE Statement—Checklist of items that should be included in reports of ***cross-sectional studies***

	Item No	Recommendation	Page No
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	3-4
Objectives	3	State specific objectives, including any prespecified hypotheses	4
Methods			
Study design	4	Present key elements of study design early in the paper	4
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	4
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	4-5
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	4-5
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	*4-5*
Bias	9	Describe any efforts to address potential sources of bias	4-5
Study size	10	Explain how the study size was arrived at	4-5
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	4-5
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	5
		(*b*) Describe any methods used to examine subgroups and interactions	5
		(*c*) Explain how missing data were addressed	5
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	5
		(*e*) Describe any sensitivity analyses	5
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	5
		(b) Give reasons for non-participation at each stage	5
		(c) Consider use of a flow diagram	5
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	6
		(b) Indicate number of participants with missing data for each variable of interest	
Outcome data	15*	Report numbers of outcome events or summary measures	6
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	6-11

		(*b*) Report category boundaries when continuous variables were categorized	6-11
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	6-11
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	6-11
Discussion			
Key results	18	Summarise key results with reference to study objectives	11-13
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	13
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	13
Generalisability	21	Discuss the generalisability (external validity) of the study results	13
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	13

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

BMJ Open

Depression, Anxiety, and Quality of Life of Afghan Women Living in Urban Areas Under the Taliban Government: A cross-sectional study

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2023-071939.R2
Article Type:	Original research
Date Submitted by the Author:	18-Apr-2023
Complete List of Authors:	Neyazi, Ahmad; Afghanistan Center for Epidemiological Studies Padhi, Bijaya; Post Graduate Institute of Medical Education and Research, Community Medicine and School of Public Health Mohammadi, Ab. Qadim; Herat Regional Hospital Ahmadi, Mahsa; George Mason University, Department of Neuroscience Erfan, Adiba; Afghanistan Medical Students Association Bashiri, Bahara; Afghanistan Medical Students Association Neyazi, Mehrab; Atefi Institute of Health Sciences Ishaqzada, Marjina; Afghanistan Medical Students Association Noormohammadi, Morteza; Afghanistan Center for Epidemiological Studies Griffiths, Mark; Nottingham Trent University, Social Sciences
Primary Subject Heading:	Public health
Secondary Subject Heading:	Mental health
Keywords:	Quality of Life, Depression & mood disorders < PSYCHIATRY, Anxiety disorders < PSYCHIATRY

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Depression, Anxiety, and Quality of Life of Afghan Women Living in Urban Areas Under the Taliban Government: A cross-sectional study

Ahmad Neyazi*
Afghanistan Center for Epidemiological Studies, Herat, Afghanistan.
Bijaya Kumar Padhi
Department of Community Medicine and School of Public Health, Postgraduate Institute of Medical Education and Research, Chandigarh, India.
Ab. Qadim Mohammadi
Mental Health Ward, Herat Regional Hospital, Herat, Afghanistan.
Mahsa Ahmadi
Department of Neuroscience, George Mason University, Fairfax, VA, United States.
Adiba Erfan
Afghanistan Medical Students Association, Mazar-e-Sharif, Afghanistan.
Bahara Bashiri
Afghanistan Medical Students Association, Mazar-e-Sharif, Afghanistan.
Mehrab Neyazi
Faculty of Pharmacy, Atefi Institute of Health Sciences, Herat, Afghanistan
Marjina Ishaqzada
Afghanistan Medical Students Association, Kabul, Afghanistan.
Morteza Noormohammadi
Afghanistan Center for Epidemiological Studies, Herat, Afghanistan.
Mark D. Griffiths
Department of Psychology, Nottingham Trent University, United Kingdom.

*** Corresponding author: Ahmad Neyazi**

Afghanistan Center for Epidemiological Studies, Herat, Afghanistan.
ahmadniazi000@gmail.com

ORCID: 0000-0002-6181-6164

Word count: 4308

Abstract

Objectives: According to the World Health Organization (WHO), depression is a common mental health illness that is characterized by a persistent feeling of sadness and loss of interest. The present study examined the association of two mental health variables (i.e., depression, anxiety) with quality of life (QoL), and the socio-demographic characteristics of Afghan women living in urban areas under the rule of Taliban government in Afghanistan.

Design: Cross-sectional study administered between Nov 10, 2021 to Dec 25 2021 among women.

Setting: Across major provinces of Afghanistan (Herat, Mazar-e-Sharif, Kabul, and Samangan).

Measurements: Data were collected using a pretested structured questionnaire. Data entry was carried out using *Microsoft Excel 2016*. And then exported to IBM SPSS version 26 for Microsoft Windows. Logistic regression models were used to examine the association of depression, anxiety with QoL and socio-demographic characteristics among women (N=438).

Results: The prevalence of depression symptoms were 80.4%, and mild to extremely severe anxiety was 81.0%. Depression symptoms among Afghan women were associated with being older, having more children, lower education level, other individuals' bad behavior, bad events experienced in the past month, and feeling physically ill. Multiple regression analysis indicated that low monthly household income (AOR: 2.260; 95%CI: 1.179-4.331, *p*=.014) poor physical domain of quality of life (AOR:4.436; 95%CI: 1.748-11.256, *p*=.002), and poor psychological domain of quality of life (AOR: 23.499; 95%CI: 7.737-71.369, *p*<.001) were significantly associated with depression.

Conclusion: The prevalence of depression was high women living under the government of the Taliban in Afghanistan. Considering the high prevalence of depression, anxiety, and their impact on quality of life and the overall quality of healthcare services, international health organizations should implement programs for regular screening of depression and anxiety, and there should be psychological counselling services available for vulnerable women living under the government of the Taliban.

Keywords: depression, anxiety, quality of life, women, Taliban, Afghanistan.

Article Summary

Strengths and Limitations of this Study

- This study examined the association of depression, anxiety with quality of life, and the socio-demographic characteristics of Afghan women
- Validated questionnaires and scales was used for this study.
- The findings provided estimates of depression and anxiety among Afghan women and the association of these mental health disorders with quality of life but all the data were self-report and subject to a range of methods biases.
- This study was that the sample is not representative of all Afghan women.

Introduction

According to the World Health Organization (WHO), depression is a common mental health illness that is characterized by a persistent feeling of sadness and loss of interest [1]. Symptoms include fatigue, poor concentration, and disrupted sleep and appetite [1]. The WHO also states that nearly 5% of adults worldwide suffer from depression. It also notes that depression can limit an individual's capacity to function and live a fulfilling life. Life events and difficulties such as the death or loss of a loved one, financial issues, conflicts, and poor social support can trigger depression [2]. According to the WHO, depression is a leading cause of disability, and disproportionately affects women [1]. Consequences can include suicide and self-destructive behaviors. In relation to gender differences in depression, a group of researchers in China found that genetic factors and the differential heritability of depression between men and women, may be one of the reasons why women are more susceptible to depression than men [3]. Moreover, women can experience depression during pregnancy [4], but also, according to Guo et al., 1 in 20 women in the US of reproductive age who are not pregnant also suffer from major depression [5].

Anxiety is another common mental health disorder [6]. It is characterized by feelings of tension and anxious thoughts, as well as elevated blood pressure [7]. Normally, anxiety is a natural emotion needed for survival. However, excessive anxiety, particularly in the absence of any threat, is considered a mental illness [6]. Cognitive symptoms include difficulty speaking, poor concentration, poor memory, and confusion [8]. Moreover, physiological symptoms include shaking, sweating, dizziness, nausea, and increased heart rate.

The WHO defines the quality of life (QoL) as an individual's view of their position in life in relation to their goals, standards, and concerns and within the framework of their culture and value systems [9]. Quality of life (QoL) describes the overall well-being of an individual including the positive and negative aspects of their life [10]. These aspects include physical, mental, and spiritual health as well as education status, safety, freedom, relationships, and wealth. QoL is becoming more of a subjective individual perception and less objective [11].

Nearly 50% of those with depression are also diagnosed with anxiety disorders [12]. Anxiety can also run across generations. In a Swedish study, researchers found that women whose mothers were diagnosed with anxiety were more than twice as likely to experience anxiety disorders themselves [13]. Moreover, if both the mother and grandmother had an anxiety disorder, the odds of a child being diagnosed with anxiety increases threefold [14]. Anxiety and depression are highly comorbid mental health disorders, and their symptoms commonly overlap [14]. Among the causes of depression are stressful events, family history, specific personality traits (e.g., neuroticism), loneliness, and childbirth [15]. On the other hand, factors such as traumatic life events or underlying health issues can lead to anxiety disorders [16]. A national survey on depression and anxiety in Afghanistan (where the present study was carried out), reported that the Afghan population was heavily exposed to traumatic events, with 64.7% having personally encountered at least one traumatic life event [17]. A study conducted by Najafipour et al. in Iran in 2021, reported that the likelihood of developing anxiety and depression was 2.26 and 2.56 times higher among women compared to men, respectively [18]. Najafipour et al. also noted that research into QoL can be diverse regarding research groups, designs, and measures.

Moreover, QoL is mainly studied in developed countries. However, the cross-cultural significance of QoL is not clear. According to a global survey in 2020, QoL was higher among older male adults compared to older female adults across many nations [19-20]. In relation to the factors affecting QoL, it has been found that socio-economic factors play an important role in the QoL such that the QoL among individuals in developing countries is significantly impacted by a lack of financial support [21]. Another study noted that QoL is lower among individuals with anxiety and depression even before the onset of depression [22]. However, their QoL further drops with the onset of mental health disorders [22]. In relation to the factors

affecting QoL among patients with depression, Cho et al. reported that *"older age, lower level of education, lower income, worse subjective perception of health, unemployment, obesity and mental health struggles"* are related to the lower QoL among patients experiencing depression [23].

According to the WHO, one in ten individuals living in conflict zones experience moderate or severe mental health disorders and there is still a lack of awareness around mental health in many countries [24]. After two decades of war, the Taliban returned to power in Afghanistan in 2021 [25]. Due to such conflicts and wars, the mental health of Afghan youth has been negatively impacted. A 2021 report noted that after decades of war and due to the current political situation in Afghanistan, immediate attention and investment is required for mental health [26]. Moreover, due to the social norms in Afghanistan, women and girls face additional obstacles. A cross-sectional study conducted in 2022, found that gender plays a role in the mental health of high school students such that girls experienced higher levels of anxiety and depression in comparison to boys [27]. Another recent 2022 study examining mental health and suicidality among Afghan university students reported that 69.7% had clinical signs of depression after the takeover of Taliban in 2021 [28]. Based on a report by the Canadian Women for Women in Afghanistan, in post-Taliban era in 2002, the prevalence of depression was reported to be 73% among Afghan women. This report also noted that 86% of women had significant anxiety symptoms [29]. Another study conducted in 2021 shows that 79.1% of Afghan women were depressed before the fall of the government to the Taliban [30].

Women continue to face many obstacles and challenges in their pursuit of equality. In many parts of the world, women are still denied basic rights and freedoms, including the right to education, the right to work, and the right to vote, as well as subjugation to men within family settings. Even in more progressive societies, women continue to face discrimination and inequality in the workplace, in politics, and in their personal lives [31]. When the Taliban government took over in 2021, the country faced an economic, food, and health crisis. The retreat of international donors and increased sanctions by the international community led to the collapse of the economy, high unemployment, food insecurity, and malnutrition. Moreover, under the Taliban government, women have been marginalized.

With more than half of Afghanistan's population now living below the poverty line, the situation is even worse for girls and women [32]. Under the Taliban government, women are limited in education, employment, mobility, political participation, healthcare, and public presence [33]. These conditions can exacerbate already existing mental health disorders among women. Along with other factors, COVID-19 is likely to have had a negative impact on women's mental health. With many schools and daycare centers closed, women had to take on additional responsibilities such as caring for children and/or elderly family members, often while trying to work from home. This increased workload can lead to feelings of exhaustion, frustration, and burnout, all of which can take a toll on mental health [34].

Many studies have emphasized the importance of mental health [35-37]. However, under the rule of the Taliban government in Afghanistan, no previous study has examined depression, anxiety, and QoL all together and specifically among women under the rule of Taliban. The present study is the first to investigate depression, anxiety, and QoL among women simultaneously. It also examined the factors associated with depression, anxiety, and QoL. Finally, the study examined the association of the two mental health variables (depression, anxiety) with QoL, and the socio-demographic characteristics of Afghan women living under the rule of Taliban in urban areas.

Methods

Participants, study design, and sample

A cross-sectional study was conducted by the Afghanistan Center for Epidemiological studies. The study participants (N=438) women aged 15-70 years were recruited from urban areas in major provinces (Herat, Mazar-e-Sharif, Kabul, and Samangan) of Afghanistan. Participants were interviewed face-to-face and

their answers were recorded by the data collectors. The eligibility criteria to participate in the present study were: (i) being female; (ii) being 15 years old or older; (iii) being able to understand the Dari language, and (iv) providing written or verbal informed consent for adults (aged 18 years or above) from themselves and for adolescents (aged 15 -18 years) from their parents. The target sample size of participants was determined using the formula $N = Z\alpha 2P(1 - P)/d^2$, in which $\alpha = 0.05$ and $Z\alpha = 1.96$, and the estimated acceptable margin of error for proportion d was 5%. The proportion of women with depression was estimated at 80%, based on the available literature [34]. The sample size was calculated using OpenEpi software (v3.01).

Instruments

A survey consisting of four sub-sections was used in the present study. The sub-sections assessed: socio-demographics, depression, anxiety, and quality of life.

The socio-demographic section included questions concerning age, height, weight, marital status, number of children, province of residency, educational level, monthly household income, occupation, individual behavior (how good or bad other people behaved with the participants during the past month), Taliban's behavior (how good or bad the Taliban forces behaved with the participants during the past month), whether experienced a bad event in the past month (i.e., any action or event that happened during the past month which caused the participant to feel down or depressed. This was left up to the participants to interpret what the bad event was) and feeling physically ill during the past month.

In order to assess participants' symptoms of depression, the Dari version of the 20-item Center for Epidemiological Studies Depression Scale (CES-D) was used [38-39]. The CES-D comprises three sub-scales (negative items, positive items, and interpersonal relationships). All of the items (e.g., *"I felt everything I did was an effort"*) are scored from 0 ("*rarely or none of the time/less than one day during the past week*") to 3 ("*Most of all of the time/5-7 days during the past week").* The scores range from 0 to 60. The standard cut-off score was used as follows: a score between 0 to 15 is considered as normal. Participants with a score higher than 15 are considered as having depression symptoms. Cronbach's alpha in the present study was 0.87.

In order to assess participants' symptoms of anxiety, the 14-item subscale of the Dari version of the Depression, Anxiety, Stress Scale-42 (DASS-42) was used [40]. All of the items (e.g., *"I had a feeling of faintness"*) are scored from 0 ("*did not apply to me at all*") to 3 ("*Applied to me very much, or most of the time*"). The scores range from 0 to 42 which indicate one of the five states of anxiety: a score between 0 to 7 is considered as normal; 8 to 9 indicates mild anxiety; 10 to 14 indicates moderate anxiety; 15-19 indicates severe anxiety; and a score of 20 or higher indicates extremely severe anxiety. Cronbach's alpha in the present study was 0.83.

In order to assess participants' quality of life, the Dari language validated version of the World Health Organization Quality of Life–BREF (WHOQOL-BREF-26) was used [41]. The WHOQOL-BREF-26 comprises four subscales (physical health domain, psychological health domain, social relationships domain, and environment domain). All of the items (e.g., *"To what extent do you feel that physical pain prevents you from doing what you need to do?"*) are scored from 1 (*not at all*) to 5 (*an extreme amount*). In order to make scores comparable with the WHOQOL-100, raw scores were converted into the transformed score to range within 0-100. For each subscale of the WHOQOL-BREF 26, a total score of less than 46 indicates low QoL; 46 to 65 indicates moderate QoL; and higher than 65 indicates high QoL [42]. Cronbach's alpha in the present study was 0.85.

Analysis

Data entry was carried out using *Microsoft Excel 2016*. The analysis was performed with the *IBM SPSS version 26.0 for Windows*. Descriptive statistics included means, standard deviations, frequencies, and percentages. Associations between variables were evaluated using chi-square tests. Multiple regression

analysis was used to examine independent socio-demographics, sub-groups of the QoL, and anxiety with the presence of depression. All of the variables with a *p*-value less than 0.05 were considered as significant.

Patient and public involvement statement

Patients or the public were not involved in the design, conduct, reporting and dissemination plans of our research.

Results

Socio-demographics

Two-thirds of the participants' BMI were in normal weight range (72.4%). More than half of the participants were single (54.3%). Almost half of the participants reported that their monthly household income was less than the equivalent of $50 (US) (54.3%). Almost two-thirds of the participants were unemployed (69.2%) **(Table 1)**.

Table 1. Socio-demographic characteristics in the study sample (N=438)

Characteristic	Categories	Number (N)	Percentage (%)
Age group	15–24-years	245	55.9
	25–70-years	193	44.1
BMI	Underweight	31	7.1
	Normal weight	317	72.4
	Overweight	69	15.8
	Obesity	21	4.8
Marital status	Single	238	54.3
	Married	175	40.0
	Widow/divorced	25	5.7
Number of children	None	274	62.6
	1-5	120	27.4
	5-12	44	10.0
Province	Herat	91	20.8
	Kabul	113	25.8
	Mazar-e-Sharif	117	26.7
	Samangan	117	26.7
Education level	Illiterate	77	17.6
	Primary school	19	4.3
	Secondary school	20	4.6
	High school	97	22.1
	University	255	51.4
Monthly household income	Less than $50	238	54.3
	$50 - $100	89	20.3
	$100 - $200	74	16.9
	$200 - $300	32	7.3
	More than $300	5	1.1
Occupation	Employed	135	30.8
	Unemployed	303	69.2
Individuals' behavior in the past month	Good	339	77.4
	Bad	99	22.6
Taliban's behavior in the past month	Good	162	37.0
	Bad	276	63.0

Experienced a bad event in the past month	Yes	314	71.7
	No	124	28.3
Feeling physically ill in the past month	Yes	104	23.7
	No	334	76.3
Total		**438**	**100.0**

The portions of participants with a high QoL in the four domains was as follows: physical health domain (13.0%), psychological health domain (11.2%), social relationship domain (14.4%), and environment domain (3.7%) category **(Figure 1)**.

<Figure 1>

Four-fifths of the participants had symptoms of depression (80.4%). Symptoms of depression were significantly related to (i) age (older women more likely to depressed), (ii) number of children (women with more children more likely to be depressed), (iii) educational level (women with lower education more likely to be depressed), (iv) other individuals' behavior (women who were treated badly by other Individuals in the past month more likely to be depressed), (v) traumatic events (women experiencing a traumatic event in the past month more likely to be depressed), and (vi) feeling physically ill (women feeling physically ill more likely to be depressed compared to those who did not) **(Table 2).**

Table 2. Association of depression with participants socio-demographic characteristics (n=438)

Characteristic	**Categories**	**Mental health**		***p*-value**
		Normal	Depressed	
		N (%)	N (%)	
Age group	15–24-years	58 (23.7)	187 (76.3)	**.017**
	25–70-years	28 (14.5)	165 (85.5)	
BMI	Underweight	7 (22.6)	24 (77.4)	.842
	Normal weight	64 (20.2)	253 (79.8)	
	Overweight	12 (17.4)	57 (82.6)	
	Obesity	3 (14.3)	18 (85.7)	
Marital status	Single	54 (22.7)	184 (77.3)	.120
	Married	30 (17.1)	145 (82.9)	
	Widow/divorced	2 (8.0)	23 (92.0)	
Number of children	None	64 (23.4)	210 (76.6)	**.018**
	1-5	19 (15.8)	101 (84.2)	
	5-12	3 (6.8)	41 (93.2)	
Province	Herat	22 (24.2)	69 (75.8)	.120
	Kabul	14 (12.4)	99 (87.6)	
	Mazar-e-Sharif	27 (23.1)	90 (76.9)	
	Samangan	23 (19.7)	94 (80.3)	
Education level	Illiterate	6 (7.8)	71 (92.2)	**.007**
	Primary school	1 (5.3)	18 (94.7)	
	Secondary school	4 (20.0)	16 (80.0)	
	High school	18 (18.6)	79 (81.4)	
	University	57 (25.3)	168 (74.7)	
Monthly household income	Less than $50	37 (15.5)	201 (84.5)	.050
	$50 - $100	17 (19.1)	72 (80.9)	
	$100 - $200	20 (27.0)	54 (73.0)	
	$200 - $300	11 (34.4)	21 (65.6)	

	More than $300	1 (20.0)	4 (80.0)	
Occupation	Employed	24 (17.8)	111 (82.2)	.514
	Not employed	62 (20.5)	241 (79.5)	
Individuals' behavior in the past month	Good	79 (23.3)	260 (76.7)	**<.001**
	Bad	7 (7.1)	92 (92.9)	
Taliban's behavior in the past month	Good	38 (23.5)	124 (76.5)	.123
	Bad	48 (17.4)	228 (82.6)	
Experienced a bad event in the past month	Yes	44 (14.0)	270 (86.0)	**<.001**
	No	42 (33.9)	82 (66.1)	
Feeling physically ill in the past month	Yes	11 (10.6)	93 (89.4)	**.008**
	No	75 (22.5)	259 (77.5)	
Total		**86 (19.6)**	**352 (80.4)**	

Approximately four-fifths of the participants were found to have mild to extremely severe level of anxiety (81.0%). More specifically, 19.0% had no anxiety at all, 6.2% had mild anxiety, 22.6% had moderate anxiety, 21.7% had severe anxiety, and 30.5% had extremely severe anxiety. Symptoms of mild to severe anxiety were significantly related to (i) age (older women more likely to have anxiety), marital status (single women less likely to have anxiety), province (women living in Kabul more anxious than those living in Mazar-e-Sharif), educational level (women with lower education more likely to be anxious), occupation (unemployed women less likely to have anxiety), traumatic events (women experiencing a traumatic event in the past month more likely to have anxiety), and feeling sick (women feeling physically ill in the past month more likely to have anxiety than those who did not) **(Table 3).**

Table 3. Association of anxiety with participants socio-demographic characteristics (N=438)

Characteristic	**Categories**	**Mental health**		***p*-value**
		Normal	Anxious	
		N (%)	N (%)	
Age group	15–24-years	33 (24.4)	102 (75.6)	**.011**
	25–70-years	10 (11.0)	81 (89.0)	
BMI	Underweight	4 (21.1)	15 (78.9)	.962
	Normal weight	32 (19.5)	132 (80.5)	
	Overweight	5 (16.1)	26 (83.9)	
	Obesity	2 (16.7)	10 (83.3)	
Marital status	Single	35 (24.0)	111 (76.0)	**.037**
	Married	7 (10.4)	60 (89.6)	
	Widow/divorced	1 (7.7)	12 (92.3)	
Number of children	None	36 (23.4)	118 (76.6)	.050
	1-5	6 (10.2)	53 (89.8)	
	5-12	1 (7.7)	12 (92.3)	
Province	Kabul	15 (13.4)	97 (86.6)	**.032**
	Mazar-e-Sharif	28 (24.6)	86 (75.4)	
Education level	Illiterate	0 (0.0)	23 (100.0)	**.029**
	Primary school	0 (0.0)	9 (100.0)	
	Secondary school	0 (0.0)	3 (100.0)	
	High school	9 (17.6)	42 (82.4)	
	University	34 (24.3)	106 (75.7)	
Monthly household income	Less than $50	12 (13.5)	77 (86.5)	.054
	$50 - $100	7 (13.5)	45 (86.5)	

	$100 - $200	16 (28.1)	41 (71.9)	
	$200 - $300	8 (32.0)	17 (68.0)	
	More than $300	0 (0.0)	3 (100.0)	
Occupation	Employed	10 (10.5)	85 (89.5)	**.006**
	Unemployed	33 (25.2)	98 (74.8)	
Individuals' behavior in the past month	Good	35 (22.4)	121 (77.6)	.051
	Bad	8 (11.4)	62 (88.6)	
Taliban's behavior in the past month	Good	21 (19.4)	87 (80.6)	.878
	Bad	22 (18.6)	96 (81.4)	
Experienced a bad event in the past month	Yes	22 (15.2)	123 (84.8)	**.048**
	No	21 (25.9)	60 (74.1)	
Feeling physically ill in the past month	Yes	2 (5.6)	34 (94.4)	**.025**
	No	41 (21.6)	149 (78.4)	
Total		**43 (19.0)**	**183 (81.0)**	

Almost nine-tenths of participants who self-rated their QoL as very poor had depression symptoms (86.1%). Over nine-tenths of all participants with low QoL in the physical domain had depression symptoms (93.4%). Over nine-tenths of participants with low QoL in the psychological domain had depression symptoms (95.3%). Having depressive symptoms was found significantly associated with all of the four domains of QoL **(Table 4)**.

Table 4. Association of quality of life of participants with presence of depression (N=438)

Quality of life	**Categories**	**Mental health**		***p*-value**
		Normal	Depressed	
		N (%)	N (%)	
How would you rate your quality of life?	Very poor	5 (13.9)	31 (86.1)	**<.001**
	Poor	4 (5.1)	74 (94.9)	
	Neither poor nor good	23 (13.9)	142 (86.1)	
	Good	39 (31.5)	85 (68.5)	
	Very good	15 (42.9)	20 (57.1)	
How satisfied are you with your health?	Very dissatisfied	1 (3.2)	30 (96.8)	**<.001**
	Dissatisfied	5 (8.5)	54 (91.5)	
	Neither satisfied nor dissatisfied	21 (15.0)	119 (85.0)	
	Satisfied	31 (25.6)	90 (74.4)	
	Very satisfied	28 (32.2)	59 (67.8)	
Physical domain	Low	15 (6.6)	213 (93.4)	**<.001**
	Moderate	39 (25.5)	114 (74.5)	
	High	32 (56.1)	25 (43.9)	
Psychological domain	Low	11 (4.7)	225 (95.3)	**<.001**
	Moderate	43 (28.1)	110 (71.9)	
	High	32 (65.3)	17 (34.7)	
Social relationship domain	Low	28 (11.9)	208 (88.1)	**<.001**
	Moderate	33 (23.7)	106 (76.3)	
	High	25 (39.7)	38 (60.3)	
Environment domain	Low	43 (13.6)	273 (86.4)	**<.001**
	Moderate	36 (34.0)	70 (66.0)	
	High	7 (43.8)	9 (56.2)	
Total		**86 (19.6)**	**352 (80.4)**	

Two-thirds of participants who rated their QoL as very poor (63.2%) had a mild to extremely severe level of anxiety. Over nine-tenths of participants with low QoL in the physical domain (93.5%) had anxiety symptoms and 93.1% of participants with low QoL in the psychological domain had anxiety symptoms. The presence of mild to extremely severe level of anxiety among the participants of the present study was found significantly associated with all of the four domains of QoL **(Table 5)**.

Table 5. Association of quality of life of participants with presence of anxiety (N=438)

Quality of life	Categories	Mental health		*p*-value
		Normal	Anxious	
		N (%)	N (%)	
How would you rate your quality of life?	Very poor	7 (36.8)	12 (63.2)	**<.001**
	Poor	2 (4.3)	44 (95.7)	
	Neither poor nor good	8 (10.0)	72 (90.0)	
	Good	14 (23.7)	45 (76.3)	
	Very good	12 (54.5)	10 (45.5)	
How satisfied are you with your health?	Very dissatisfied	1 (6.7)	14 (93.3)	**<.001**
	Dissatisfied	2 (6.3)	30 (93.7)	
	Neither satisfied nor dissatisfied	10 (11.9)	74 (88.1)	
	Satisfied	9 (17.6)	42 (82.4)	
	Very satisfied	21 (47.7)	23 (52.3)	
Physical domain	Low	9 (6.5)	130 (93.5)	**<.001**
	Moderate	23 (32.9)	47 (67.1)	
	High	11 (64.7)	6 (35.3)	
Psychological domain	Low	10 (6.9)	134 (93.1)	**<.001**
	Moderate	17 (29.3)	41 (70.7)	
	High	16 (66.7)	8 (33.3)	
Social relationship domain	Low	17 (12.4)	120 (87.6)	**.001**
	Moderate	16 (23.9)	51 (76.1)	
	High	10 (45.5)	12 (54.5)	
Environment domain	Low	19 (11.0)	153 (89.0)	**<.001**
	Moderate	21 (42.9)	28 (57.1)	
	High	3 (60.0)	2 (40.0)	
Total		**43 (19.0)**	**183 (81.0)**	

Multiple logistic regression analysis was run to see which variables predicted depressive symptoms comprising the following variables: age, marital status, educational level, occupation, income, and QoL domains. Income, physical domain and psychological domain of quality of life were found significant **(Table 6)**.

Table 6: Multiple logistic regression analysis of depression on participants' characteristics and their quality of life (N=438)

Variable	AOR [95% CI]	*p*-value
Age	1.032 [0.987, 1.078]	.165
Marital status		
Unmarried/single	1.556 [0.745, 3.250]	.239
Married	Ref.	
Educational level		

Illiterate	1.914 [0.569, 6.439]	.294
Primary/secondary school	2.476 [0.768, 7.985]	.129
High school	1.810 [0.850, 3.857]	.124
University	Ref.	
Occupation		
Occupied	0.891 [0.424, 1.870]	.760
Non-occupied	Ref.	
Income		
Low	2.260 [1.179, 4.331]	**.014**
High	Ref.	
Physical domain		
Low quality of life	4.436 [1.748, 11.256]	**.002**
Moderate quality of life	2.280 [1.072, 4.849]	**.032**
High quality of life	Ref.	
Social relationship domain		
Low quality of life	0.902 [0.360, 2.261]	.825
Moderate quality of life	1.338 [0.584, 3.062]	.491
High quality of life	Ref.	
Environment domain		
Low quality of life	0.452 [0.109, 1.876]	.274
Moderate quality of life	0.438 [0.113, 1.700]	.233
High quality of life	Ref.	
Psychological domain		
Low quality of life	23.499 [7.737, 71.369]	**<.001**
Moderate quality of life	4.009 [1.736, 9.260]	**.001**
High quality of life	Ref.	

Discussion

In the present study examining Afghan women from urban areas under the rule of the Taliban government in Afghanistan, only one-tenth (9.6%) of the participants reported a normal state of mental health with nine-tenths of the total sample reporting symptoms associated with depression and/or anxiety. Previous studies have also found that gender plays a role in the mental health status and that females experience higher levels of mental health disorders compared to males [31]. More specifically, the findings of the present study indicated that 80.4% of the participants had symptoms of depression. The data also showed that 81.0% of the participants reported symptoms associated with mild to severe anxiety. Additionally, 86.1% of participants who self-reported having very poor QoL had symptoms of depression. The data show that 63.2% of participants who self-reported very poor QoL, also showed symptoms of anxiety. The factors that were significantly associated with both depression and anxiety were age (being older), number of children (having more children), education level (being less educated), experienced a bad event in the past month, and feeling physically ill in the past month.

The estimated percentage of the presence of symptoms of depression in the present study falls within the range reported by WHO (1 in 10 individuals) in the conflict zone areas. However, almost 8 in 10 were reported in the present study which is higher than that reported by the WHO [28]. Old age (25-70 years) was more associated with depression symptoms (85.5%) in comparison to younger age (15-24 years) with 76.3%. On the contrary, the findings of an interview survey from 2019 by the Centers for Disease Control and Prevention (CDC) indicated that 21.0% of the adults aged between 18-29 years had depression symptoms compared to the 16.8% of adults aged between 30-44 years [43]. Increased depression symptoms (93.2%) were found among participants with more children (5-12) compared to participants

with less children (1-5) who in turn had a higher percentage of depression symptoms (84.2%) than those with no children (76.6%). This finding contrasts the findings of a cross-sectional study on depression in Chinese adults which reported that each additional child amounted to a 9% lower risk of major depression among women [44].

The presence of depression symptoms was also significantly related to education level. More specifically, participants who were illiterate reported higher depression (92.2%) in comparison to those with university education (74.7%). This finding concurs with a study in Europe where a higher level of education was found to be associated with lower odds of depression [45].

A highly significant factor related to presence of depression was found to be experiencing a bad event during the past month. More specifically, 86.0% of those who said they experienced a bad event in the past month reported symptoms of depression compared to 66.1% who had depression but did not report experiencing bad event in the past month. Similarly, results from an Italian study among male asylum seekers and refugees found that the number of traumatic events was a risk factor for depression [46]. Finally, the findings of the present study showed that there was a higher level of depression symptoms among participants who reported they had been physically ill in the past month (89.4%) in comparison to those who did not (77.5%). Similarly, previous studies have shown that chronic disease and pain [47], as well as respiratory and digestive symptoms [48] increase the risk of developing depression.

Among the 81.0% of participants with anxiety symptoms, those who were older (25-70 years) reported a higher percentage of anxiety (89.0%) in comparison to those who were younger (15-24 years) and reported a lower percentage of anxiety (75.6%). This is in contrast with a study in Iran which reported that the prevalence of anxiety was higher among younger women compared to older women [49]. Moreover, another study conducted during the COVID-19 pandemic found that compared to the middle and old age groups, the younger age group had higher levels of anxiety [50-51]. Another significant factor associated with anxiety symptoms was marital status where widowed/divorced participants reported the highest percentage of anxiety (92.3%) compared to two other groups (married and single). Married women reported higher levels of anxiety symptoms (89.6%) compared to single women (76.0%). This finding is consistent with previous studies reporting that being divorced or widowed are among significant predictors of anxiety among women [22, 45].

With regards to education, participants who were educated to at least university level reported the lowest anxiety levels (75.7%) and all the participants who were illiterate or had studied up to secondary school reported anxiety symptoms (100%). This finding is consistent with previous studies reporting that women with lesser education are more likely to develop anxiety [52]. Moreover, in the present study, the following groups reported higher levels of anxiety compared to their counterparts: those who were residents of Kabul (86.6%) in comparison to those who lived in Mazar-e-Sharif (75.4%), those who had jobs (89.5%) in comparison to those who did not have a job (74.8%), those who experienced a bad event in the past month (84.8%) compared to those who did not (74.1%), and those who had been physically ill in the past month (94.4%) compared to those who had not (78.4%).

The findings showed that 86.1% of the participants with very poor QoL also had symptoms of depression. Two-thirds of participants with very poor QoL had symptoms of anxiety ranging from mild to severe levels (63.2%). Collectively, these findings are consistent with previous studies reporting that QoL is lower among individuals with anxiety and depression [26]. Mild to severe levels of anxiety were found to be significantly related to all four domains of the QoL (physical domain, psychological domain, social relationship domain, environment domain). This finding is consistent with the results of a literature review showing that anxiety disorders are associated with global, social, occupational, and physical domains of quality of life [53]. However, according to a study on the mental health of older age groups, anxiety was found to be associated with three domains of QoL (psychological, social, and environmental), but not with the physical domain [54].

In multivariable analysis, the only variables that were significantly associated with depression symptoms were experiencing bad events during the past month, other individuals' behavior, QoL psychological domain, QoL social relationship domain, and the presence of anxiety. All other variables such as marital status, physical illness, self-rated QoL, QoL physical domain, and QoL environment domain had no significant contribution in the regression model. Moreover, previous research has shown that depression has a significant impact on all domains of quality of life [55]. The result regarding the marital status is consistent with a cross-sectional study among Saudi medical students reporting there was no association between the student's marital status and the reported frequency of their depression symptoms [56]. According to the 2015 national survey (before the return of Taliban), half the women had depression symptoms and more than a half had symptoms related to anxiety, also in another study conducted in major provinces of Afghanistan in 2021, almost four-fifth of the participants were found to have depression symptoms [34], which are much lower rates than those in the present study (i.e., nine-tenths of the total sample reported symptoms of depression or anxiety) [56].

Limitations

The present study has several limitations. There are very few studies that have examined the mental health of Afghan women since the Taliban returned to power in Afghanistan which limits the ability to compare the results here to other studies and find any meaningful trends. Another limitation is that it did not assess the date of onset of mental health symptoms or poor QoL. Therefore, it is not known whether the participants' mental health condition changed since the Taliban takeover in Afghanistan or had preceded it. The findings provided estimates of depression and anxiety among Afghan women and the association of these mental health disorders with QoL but all the data were self-report and subject to a range of methods biases. Moreover, the study was cross-sectional, therefore it is not possible to determine any causality between the variables examined in the present study. Another limitation of this study was that the sample is not representative of all Afghan women. The sample only contained participants from urban areas and the sample had a much greater proportion of educated women than found nationally, and as a consequence a much smaller proportion of illiterate participants than that found nationally. Moreover, it is difficult to determine whether the results are indicative of a snapshot in a particularly fraught time in Afghanistan

The present study's findings suggest that mental health illnesses can be comorbid with low QoL among Afghan women, and immediate attention is required to address the mental health issues faced by Afghan women under the current Taliban government. Further studies are needed to assess the possibility of gender differences in mental health and QoL by studying cohorts of both men and women under Taliban rule. Moreover, future studies should investigate the potential sources of therapy and their availability to the general population of Afghan women.

Conclusion

The prevalence of depression is high women living under the government of the Taliban in Afghanistan. Considering the high prevalence of depression, anxiety and their impact on quality of life and the overall quality of healthcare services, the international health organizations should implement programs for regular screening of depression, anxiety, psychological counselling services for vulnerable women living under the government of the Taliban.

Ethical considerations

The Afghanistan Center for Epidemiological Studies – Ethical Committee provided the ethical approval to conduct this study (reference number #45.001; Nov 1, 2021). During the initial contact with the participants, a description of the study was presented to them. Written or verbal Informed consent was obtained from all the participants in the present study. Participants were informed that they could discontinue with the interview at any point in time from the study.

Authors Contribution: AN and AQM designed the study. AE, BB, MN, MI, and MNo collected the data. AN and BKP analyzed the data. AN, AQM, MA prepared the draft of the manuscript. AN and MG critically reviewed, rewrote, edited, and finalized the manuscript. All authors reviewed the manuscript.

Funding: This study did not receive external funding.

Declaration of Interests: Authors of this study declare that there is no competing interest.

Availability of data: All data relevant to the study are included in the article or uploaded as supplementary information

Acknowledgement: We would like to express our sincere gratitude to all the participants who enrolled in this study.

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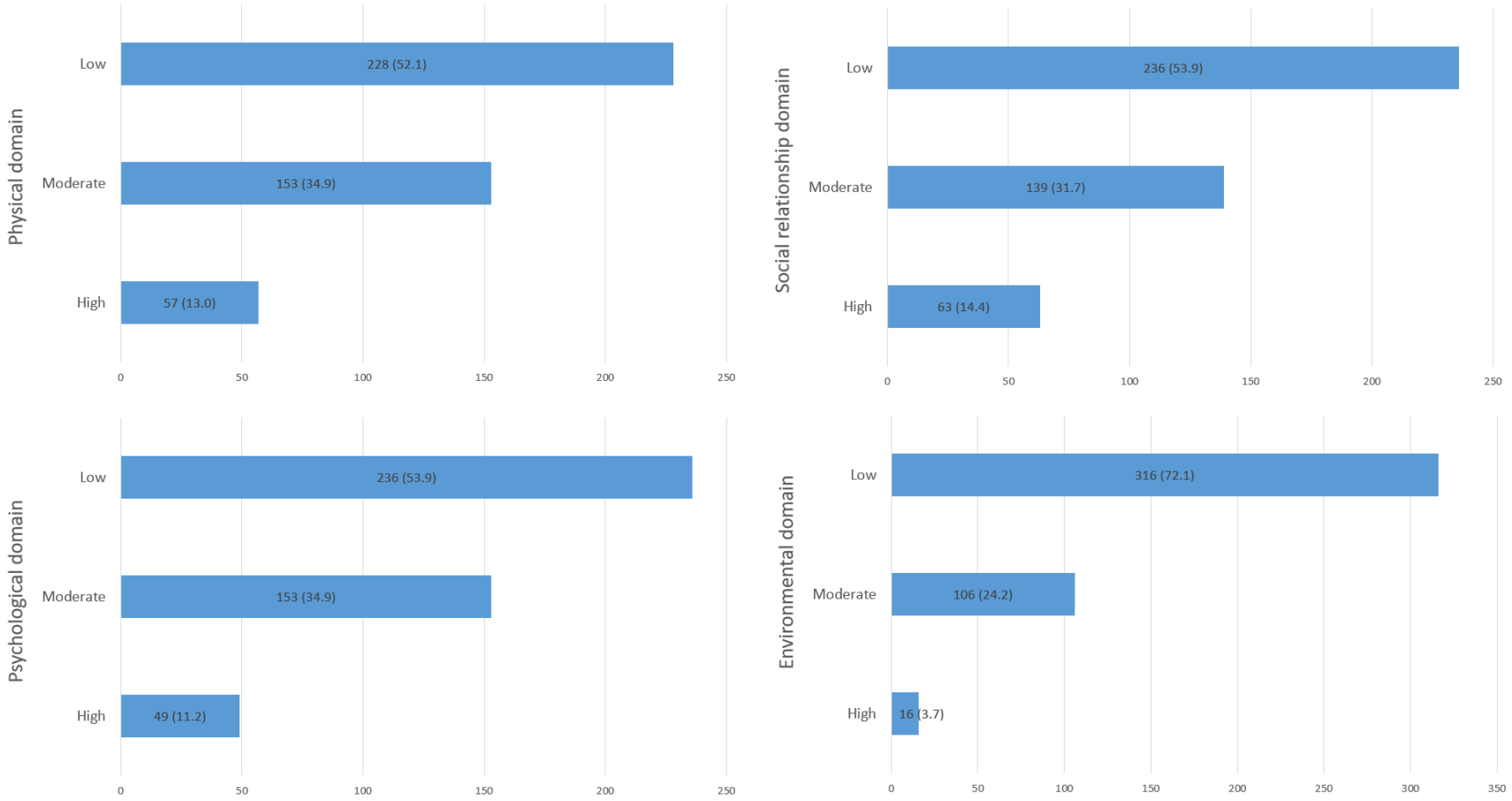
Quality of Life Domains
Physical domain
Low
228 (52.1)
Moderate
153 (34.9)
High
57 (13.0)
0
50
100
150
200
250
Social relationship domain
Low
236 (53.9)
Moderate
139 (31.7)
High
63 (14.4)
0
50
100
150
200
250
Psychological domain
Low
236 (53.9)
Moderate
153 (34.9)
High
49 (11.2)
0
50
100
150
200
250
Environmental domain
Low
316 (72.1)
Moderate
106 (24.2)
High
16 (3.7)
0
50
100
150
200
250
300
350

STROBE Statement—Checklist of items that should be included in reports of ***cross-sectional studies***

	Item No	Recommendation	Page No
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	3-4
Objectives	3	State specific objectives, including any prespecified hypotheses	4
Methods			
Study design	4	Present key elements of study design early in the paper	4
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	4
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	4-5
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	4-5
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	*4-5*
Bias	9	Describe any efforts to address potential sources of bias	4-5
Study size	10	Explain how the study size was arrived at	4-5
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	4-5
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	5
		(*b*) Describe any methods used to examine subgroups and interactions	5
		(*c*) Explain how missing data were addressed	5
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	5
		(*e*) Describe any sensitivity analyses	5
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	5
		(b) Give reasons for non-participation at each stage	5
		(c) Consider use of a flow diagram	5
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	6
		(b) Indicate number of participants with missing data for each variable of interest	
Outcome data	15*	Report numbers of outcome events or summary measures	6
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	6-11

		(*b*) Report category boundaries when continuous variables were categorized	6-11
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	6-11
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	6-11
Discussion			
Key results	18	Summarise key results with reference to study objectives	11-13
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	13
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	13
Generalisability	21	Discuss the generalisability (external validity) of the study results	13
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	13

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.